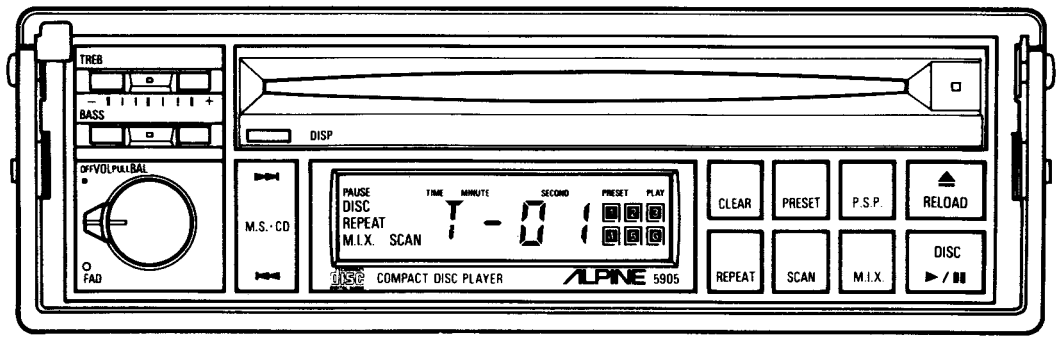
ALPINE SERVICE MANUAL

Compact Disc Player



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Specifications

CD SECTION

System ····· Optical (Compact Disc System)
Quantizing Bit Number ····· 16 Bit Linear System
Channels ····· 2 Channels
Distortion (1kHz) ····· 0.015%
Frequency Response (1kHz) ····· ±4dB (20Hz)
±1dB (100Hz~10kHz)
±2dB (20kHz)
S/N Ratio ····· 80dB
Separation ····· 60dB (1kHz)
Noise Level ····· 0.1mV
Currents (at play) ····· 1.2A
Tone Control Effect ····· Bass : ±12dB±3dB (100Hz)
Treble : ±12dB±3dB (10kHz)

GENERAL

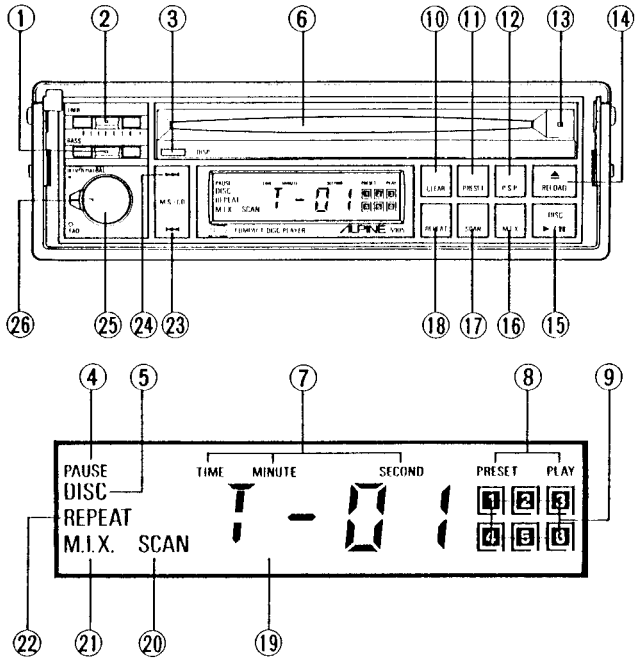
Power Supply ····· 14V DC
Output Voltage/Impedance ····· 1V/10k ohm
Semiconductors ····· 26 IC's, 45 Transistors,
28 Diodes, 11 Zener Diodes (AO model only)
27 Diodes, 10 Zener Diodes (EO model only)
Dimensions ····· Nose : 178 (W) ×50 (H) ×15 (D) mm
Chassis : 178 (W) ×50 (H) ×150 (D) mm
Weight ····· 1.6kg

COMPACT DISC

Track Pitch ····· 1.6 μm
Modulation Frequency ····· 44.1kHz
Transfer Rate ····· 4.3218Mbit/sec
Dimensions ····· 120×1.2mm

NOTE : Due to continuing product improvement, specifications and designs are subject to change without notice.

CONTROLS & INDICATORS



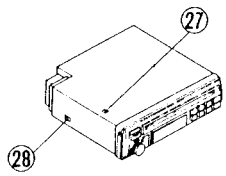


Figure 1

Listed below are all the Controls and their indicators. Please see the Operation Section for explanations.

① **BASS Control**
② **TREBLE Control**
③ **DISP Switch**

④ **PAUSE Indicator**
⑤ **DISC Indicator**
⑥ **Disc Slot**
⑦ **Time Indicator**
⑧ **P.S.P. (Preset Play) Indicator**
⑨ **Preset Address Indicators**

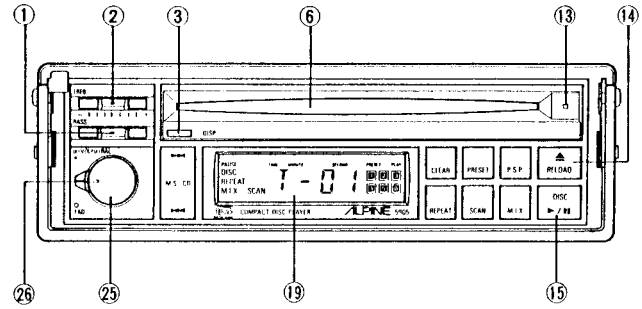
⑩ **CLEAR Switch**
⑪ **PRESET Switch**
⑫ **P.S.P. (Preset Play) Switch**
⑬ **Reset Switch**
⑭ **RELOAD (EJECT) Switch**
⑮ **DISC (PLAY/PAUSE) Switch**
⑯ **M.I.X. Switch**
⑰ **SCAN Switch**
⑱ **REPEAT Switch**

⑲ **Digital Display**
⑳ **SCAN Indicator**
㉑ **M.I.X. Indicator**
㉒ **REPEAT Indicator**

㉓ **M.S. (⏮) Switch**
㉔ **M.S. (⏭) Switch**
㉕ **Power Switch/Volume Control/Balance Control (Pull)**
㉖ **FADER Control**

㉗ **TONE BYPASS Switch (Top of Unit)**
㉘ **Tuner/Line Selection Switch (On the Side)**

OPERATION



BASIC OPERATION

System initiation

When operating for the very first time after installation or replacement of the car battery, press the Reset Switch ⑬ with a ball-point pen or other pointed object.

Power Switching and Volume Control ㉕

Rotating the Power Switch ㉕ clockwise turns power ON and continuously increases the volume. Rotating the control counter-clockwise will continuously decrease the volume, and turn the Power Off.

NOTE: The noise level on compact discs is much lower than on analog-type records or tapes; therefore, when inserting a disc, keep the volume control turned fully counterclockwise, then adjust volume by gradually turning the control clockwise once playback begins.
Do not turn clockwise too abruptly as this could damage the speakers.

Balance Control ㉕

Pull on the Volume Control and rotate to balance between left and right speakers.

Fader Control ㉖

Rotate the Fader Control ㉖ for your desired front to rear volume balance.

Separate Bass and Treble Controls (①, ②)

Slide these controls to the right to increase, and to the left to decrease the level of Bass or Treble. **Note:** Bass and Treble Controls do not function when the Tone By-Pass Switch (on top of the unit) is in the ON position.

CD OPERATION

Cautions During Playback

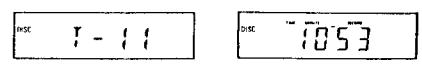
- Playing a disc while driving on a very bumpy road may result in skips but this will not scratch the disc or damage the player.

Notes:
1. Your player accepts only one disc at a time for playback. Do not attempt to load more than one disc.
2. Make sure the label side is facing up, when you insert the disc. Your player will automatically eject any disc that is inserted incorrectly. If the player continues to eject a correctly inserted disc, push the reset switch ⑬ with a sharp object such as a ballpoint pen.
3. Do not attempt to use 3-inch CD's in this player. The adaptor ring may get stuck inside and damage the player.
4. Make sure your discs are labeled as shown below:

COMPACT disc DIGITAL AUDIO

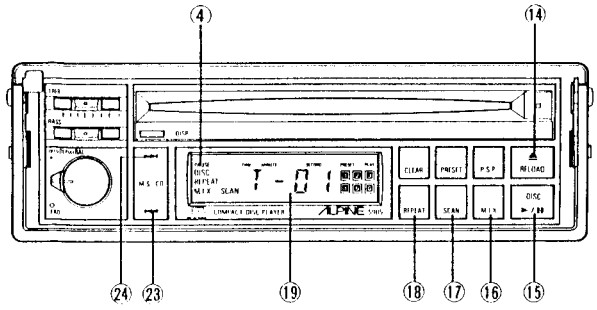
- **Load and Reload**
  1. Insert a disc into the slot ⑥.
     When the disc is halfway in, the power loading system will take over and guide the disc into play position.
  2. If the disc is left at least halfway in, press the RELOAD switch ⑭ or DISC switch ⑮.
  3. The digital display ⑲ shows " T-00 " for a second while the data on the disc is read.
  4. When a disc is loaded during radio reception, the CD mode will automatically switch on.

- **Track/Elapsed Time Display Switching**
  Press the Display Switch ③ for the Track Number being played and the Elapsed Time for the current track to be shown in the Digital Display ⑲. See below.



Track Mode Time Mode

- **Eject**
  Press the RELOAD (EJECT) switch ⑭. The disc come partially out. If the eject status is maintained more than 15 seconds, the self loading system will be automatically actuated and the disc will be reloaded into the mechanism and the player will be set to PAUSE mode.



● **Normal Play (Repeat All)**

1. Load the Disc.
2. The digital display ⑲ will show "T-00" for a second, then "T-01" will be displayed and the first track on the disc will begin playback.
3. After the last track on the disc is played back, the pickup will return to the beginning of the disc and begin playback from that point.

● **Pause**

Press the DISC switch ⑮ to hold playback temporarily. The PAUSE indicator ④ will be on and the playback stops, but the disc remains inside the player. To resume playback, press the DISC switch ⑮ again.

● **Music Sensor (Skip)**

With this feature, you can get to the beginning of the music track of your choice simply and quickly. It is functional in the play or pause mode.
The digital display ⑲ shows the pick up location with the Track Number.

- To advance to a track somewhere ahead on the disc, press ▶▶| side of the Music Sensor switch ㉔.
  1. Playback stops, the pickup moves up to the beginning of the next track ahead. The digital display ⑲ shows the number of the next track the pickup has just reached.
  2. Playback begins immediately.
  3. If you wish to reach and play another track further ahead on the disc, continue pressing the ▶▶| side of the switch ㉔ until you reach the track of your choice.

- To replay the track that is currently playing, press the |◀◀ side of the Music Sensor switch ㉓.
  1. Playback stops, the pickup moves to the beginning of the current track. The track number display will remain the same.
  2. Playback begins immediately from the beginning of the track.
  3. If you wish to reach and play another track further behind on the disc, successive presses on the |◀◀ side of the switch ㉓ will move the pickup back until you reach the track of your choice.

● **In Preset Play**

If a track not originally preset is chosen for play back with the Music Sensor (㉓, ㉔) during Preset Playback operation, the preset play operation will resume after completion of that selection.

● **FAST FORWARD/FAST BACKWARD**

The Fast Forward/Fast Backward feature works in both play and pause modes.

1. Press either the MS UP ㉔ or MS DOWN ㉓ switch for more than 2 seconds.
2. To move the pickup forward rapidly, hold down the UP ▶▶| switch ㉔.
3. To move the pickup backward rapidly, hold down the DN |◀◀ switch ㉓.
4. When pickup reaches the end of the disc, it returns to the beginning automatically from the end, playback will start from the beginning of the disc.

● **REPEAT (One)**

The repeat feature allows you to continuously playback a single track.

1. Press the REPEAT switch ⑱.
2. The music track shown in the display ⑲ will be played back repeatedly.
3. To stop repeat play back, press the REPEAT switch ⑱ a second time.

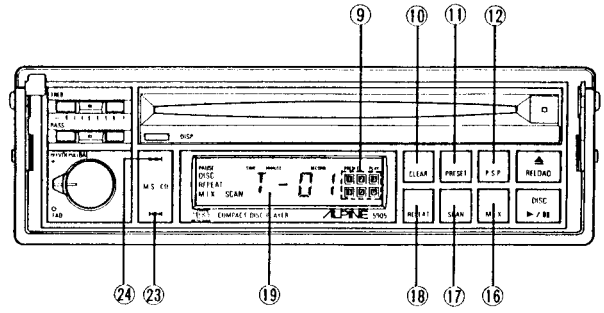
● **Scan (SCAN)**

This function allows playback of the first 10 seconds of each track in succession. This function is useful in searching for a specific program ahead on a disc.
A second push of the SCAN switch ⑰ deactivates the function.
The SCAN function also works in the Preset Play Mode. Push the SCAN switch ⑰ while in Preset Play. The first 10 seconds of the music tracks stored in the memory (up to 6) will be played back, in order, starting from the next Preset number. To stop Scan, press the SCAN switch ⑰ a second time.

● **Random Play (M.I.X.)**

Depress the M.I.X. Switch ⑯ while in play or pause mode. Music tracks will be played back in random sequence according to random number generated by the micro processor. After all the tracks on the disc have been played back once, the player will begin a new random sequence.

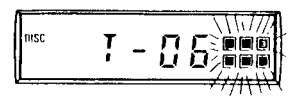
CD OPERATION



● **Preset Procedures**

● **Preset**

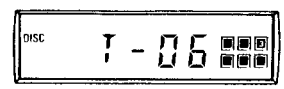
1. The preset memory can be programmed whether the disc is inserted or not.
2. Press the P.S.P. switch ⑫ for more than 2 seconds. The preset address indicator frame ⑨ will blink.
3. Press the PRESET switch ⑪ to select a preset. The address number in the indicator frame will be on.
4. Select your desired music track with the UP ㉔ and DOWN ㉓ switches. The track number is shown on the digital display.
   NOTE: Any track from 1 to 99 can be programmed (when the disc is not inserted) for preset play. However, if a track number higher than the actual number of selections on a disc is preset, that preset will automatically be cancelled when P.S.P. switch is pressed after the disc is inserted.



5. Press the PRESET switch ⑪. As shown in the illustration above, track number 6 has been memorized in the number 3 frame. The preset number will automatically advance to the next higher frame after the preset switch is pressed.

● **Preset Memory check**

1. To find out which tracks were stored into memory, keep pressing the PRESET switch ⑪.
   The Address Number and Track Number will appear on the address indicator ⑨ and digital display ⑲ in order of Address Number.



For example, the figure shows that the Track Number 6 is addressed at 3.

● **Preset Play**

To start Preset Play, Preset memory should have already been programmed. Refer to Preset procedure section.

1. Load a disc.
2. Press the P.S.P switch ⑫.
3. The playback will start from the track addressed at 1, 1 will appear on the preset address indicator ⑨ and the Track Number programmed at 1 shown on the digital display ⑲, and continue in order of Address Number to the last programmed number, up to 6.
4. After the last addressed track is played back, the pick up will return to the track programmed at 1 and begin play back again.
5. If the P.S.P. switch is pressed while Preset Play, Preset Play changes to Normal Play.

● **Preset Memory Clear**

● **All Clear**

1. Press the P.S.P. switch ⑫ for more than 2 seconds.
2. Push the Clear switch ⑩ for more than 2 seconds.

● **One Program Clear**

1. Press the P.S.P. switch ⑫ for more than 2 seconds.
2. Push the Preset Switch of your choice.
3. Push Clear Switch ⑩. (**Caution:** If pushed for more than 2 sec. all presets will be cleared.)
4. The content in the preset No. will be cleared.
5. To program another selection into this preset, follow the preset procedures, above.

CONNECTIONS

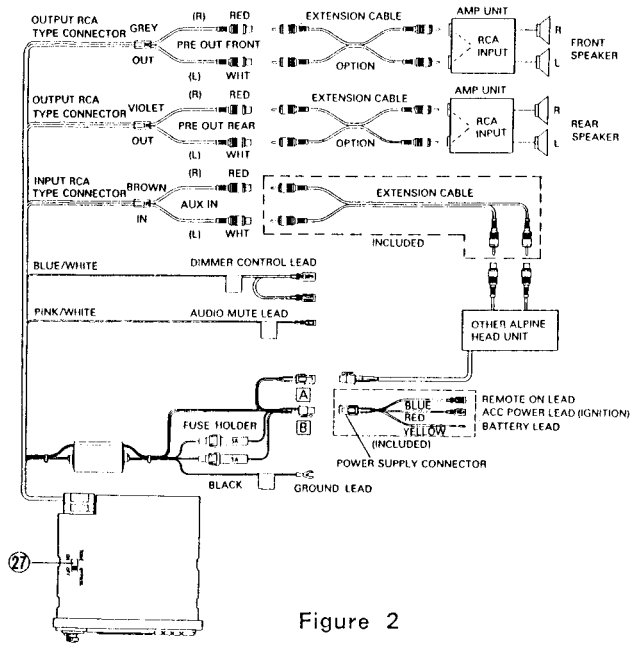
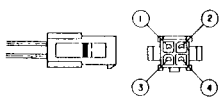


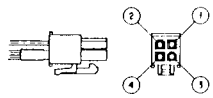
Figure 2

A AUX. POWER CONNECTOR



①	IN REMOTE
②	OUT PAUSE
③	BATTERY
④	IGNITION

B MAIN POWER CONNECTOR



①	REMOTE ON
②	IN PAUSE
③	BATTERY
④	IGNITION

PROPER CARE OF YOUR DISC

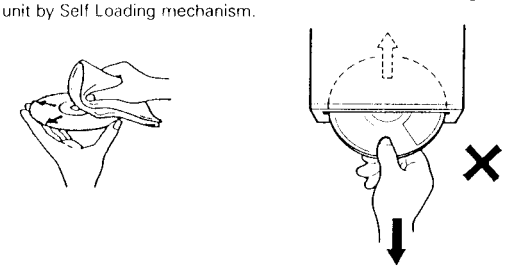
- **Proper Handling**
  Handle your disc as shown. Do not drop the disc while handling. Hold the disc so you will not leave fingerprints on the surface. If the surface is scratched, it may cause the pickup to skip signal tracks. Do not affix tape, paper, or gummed labels on the disc. Do not write on the disc.

- **Keep Your Discs Clean**
  Fingerprints, dust, or soil on the surface could cause the pickup to skip signal tracks. Wipe the surface clean with a clean soft cloth. If the surface is heavily soiled, dampen a clean soft cloth in a solution of mild neutral detergent to wipe it clean. See drawing.

- **Damaged Disc**
  Do not attempt to play damaged, warped or cracked discs. It could severely damage the playback mechanism.

- **Storage**
  When not in use, place your discs in their individual case and store them in a cool place away from the sun, heat, and dust.

- Do not grip or pull out the disc with your hand while the disc is being pulled into the unit by Self Loading mechanism.



Disassembly Instructions

<Cabinet Section>

1. Removal of Nosepiece

(1) After removal of the top cover, remove two screws marked "○" and two hooks (A) as shown in Figures 3 and 4.

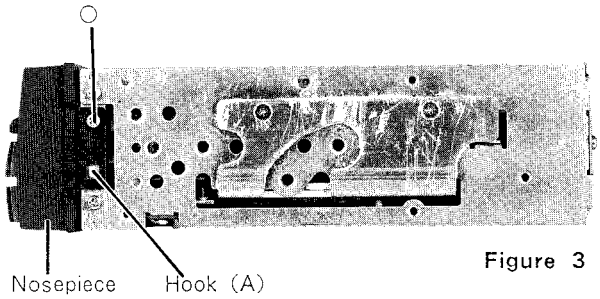


Figure 3

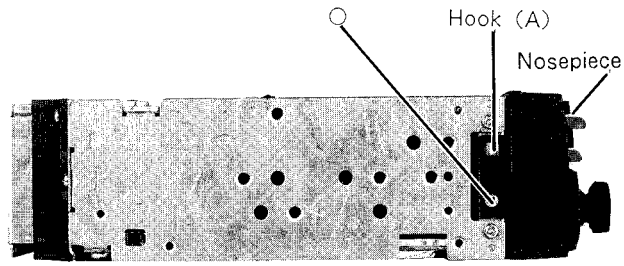


Figure 4

2. Removal of CD Deck

(1) After removal of Nosepiece, remove the solder (A) and five screws marked "△" as shown in Figure 5.

(2) Disconnect parallel wire from the Main P. C. Board.

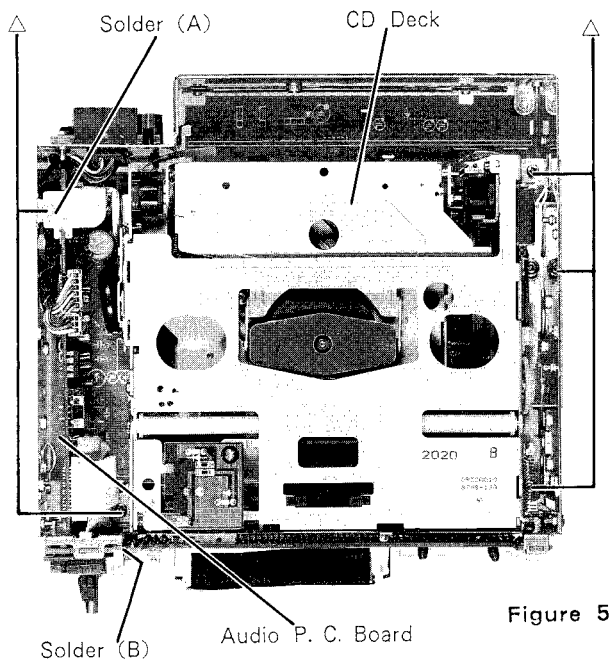


Figure 5

3. Removal of Front P. C. Board

(1) After removal of CD Deck, remove the solder (B) and two screws marked "●" as shown in Figures 5 and 7.

(2) Disconnect parallel wire from the Audio P. C. Board.

4. Removal of Main P. C. Board

(1) After removing Front P. C. Board, remove the solder (c) as shown in Figure 6.

(2) Remove four screws marked "□" and two hooks (B) as shown in Figure 6.

(3) Disconnect all wires from the Main P. C. Board.

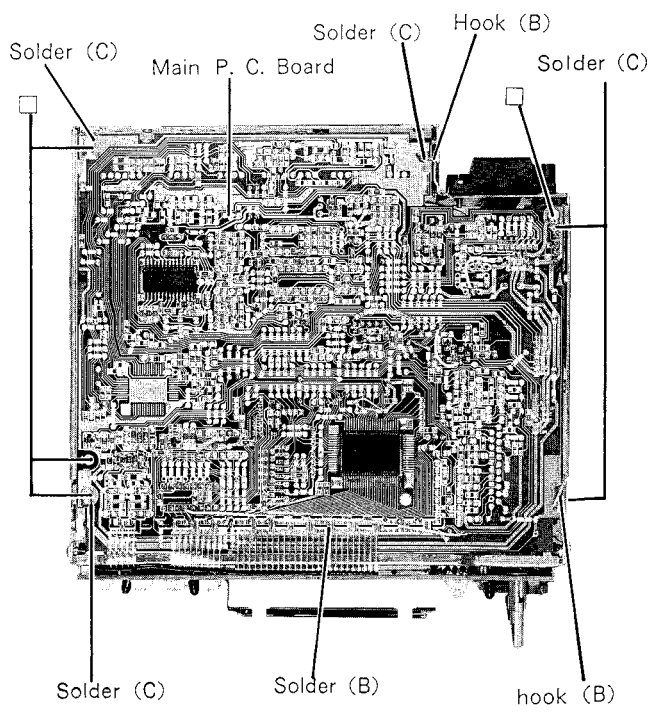


Figure 6

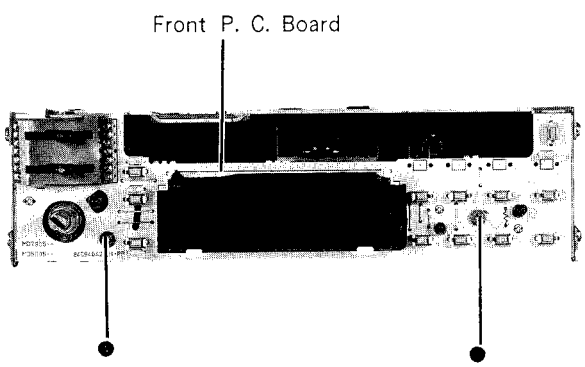


Figure 7

<CD Mechanism Section>

1. Removal of Main P. C. Board (DP)

(1) Desolder 3 places (a) and remove two screws marked "○" as shown in Figure 8.

(2) Remove all wire leads coming from the Main P. C. Board (DP).

Note :Take care not to cut the parallel wire A when desoldering 3 places (a).

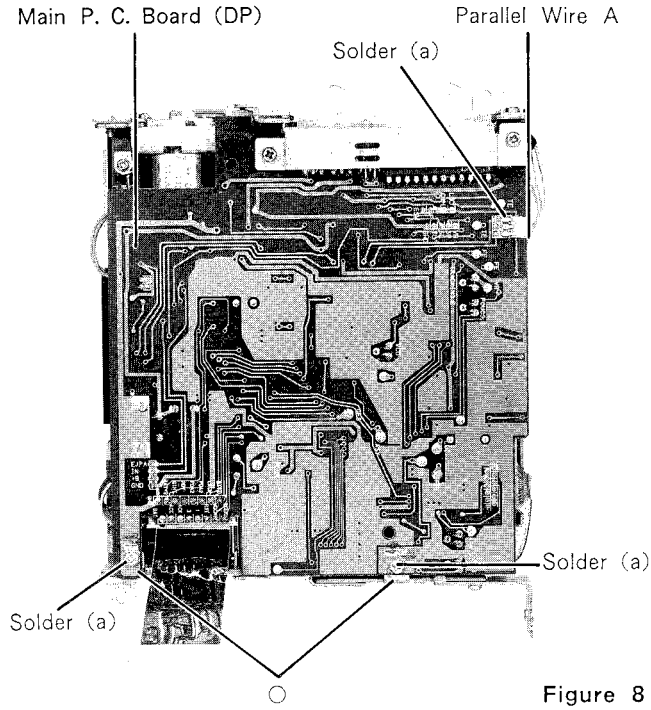


Figure 8

2. Removal of Photo P. C. Board

(1) After removal of Main P. C. Board (DP), remove two screws marked "×" as shown in Figures 9 and 12.

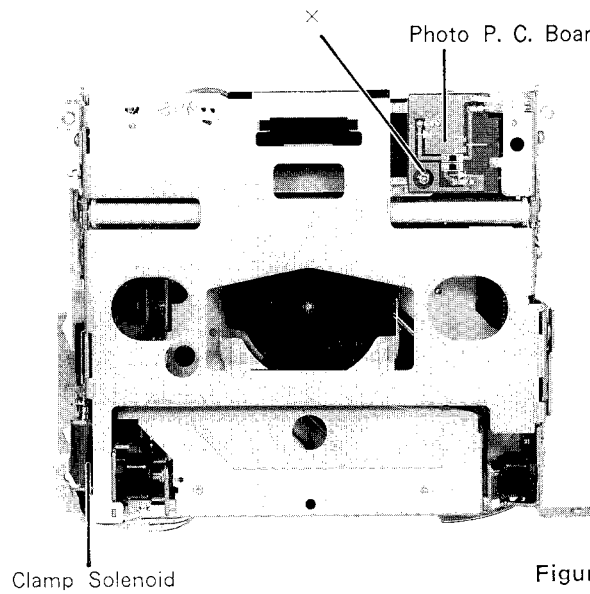


Figure 9

3. Removal of End Switch (A) P. C. Board

(1) After removing Main P. C. Board (DP), remove two screws marked "◎" as shown in Figure 10.

(2) Remove two wires coming from the clamp solenoid.

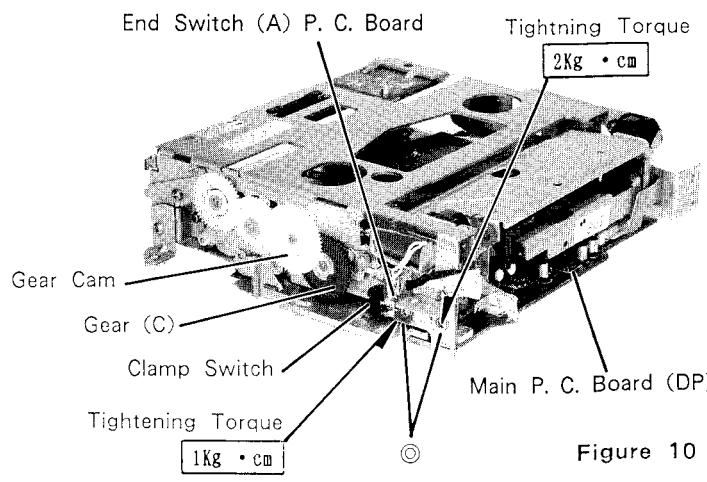


Figure 10

4. Removal of Pick-up Arm Unit

(1) Remove gear cam and gear (C) as shown in Figure 10.

(2) Remove five screws marked "※" as shown in Figure 11.

(3) Pick-up Arm Unit can be removed together with rivet loading bracket assembly.

Note :Gear cam and gear (C) are mounted with washers, do not loose washers.

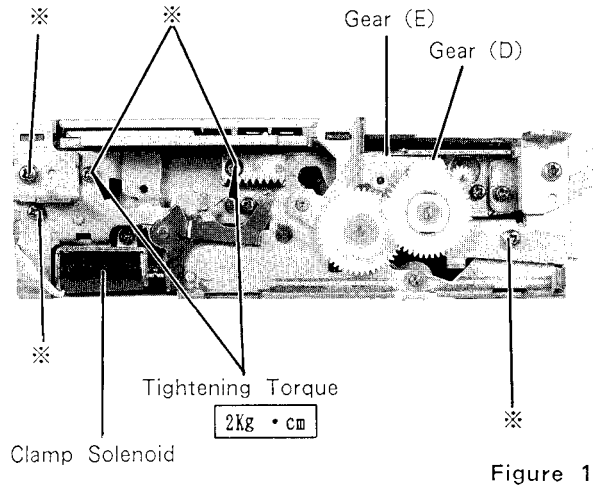


Figure 11

5. Removal of Rivet Loading Bracket Assembly

(1) After dismounting pick-up arm unit, remove rivet loading bracket assembly by pulling it toward you and twisting in direction of arrow as shown in Figure 13.

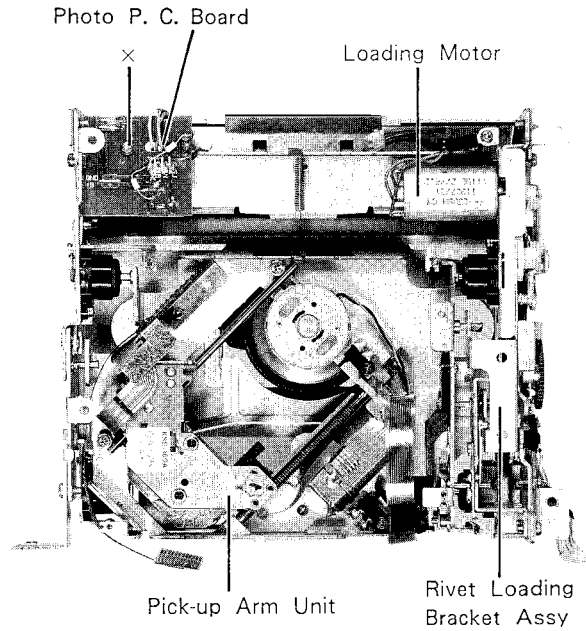


Figure 12

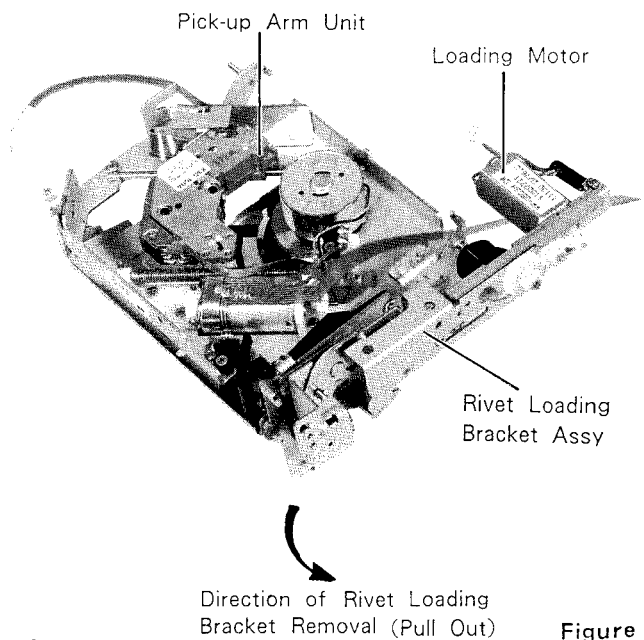


Figure 13

6. Removal of Rivet Unit

(1) After removing rivet loading bracket, remove solder (c) refering to Figure 14.

(2) Remove 3 screws (◆) shown in Figure 14.

7. Removal of Sled Motor

(1) After dismounting head unit, remove solder (b) shown in Figure 14.

(2) Remove 3 screws (◇) as shown in Figure 14.

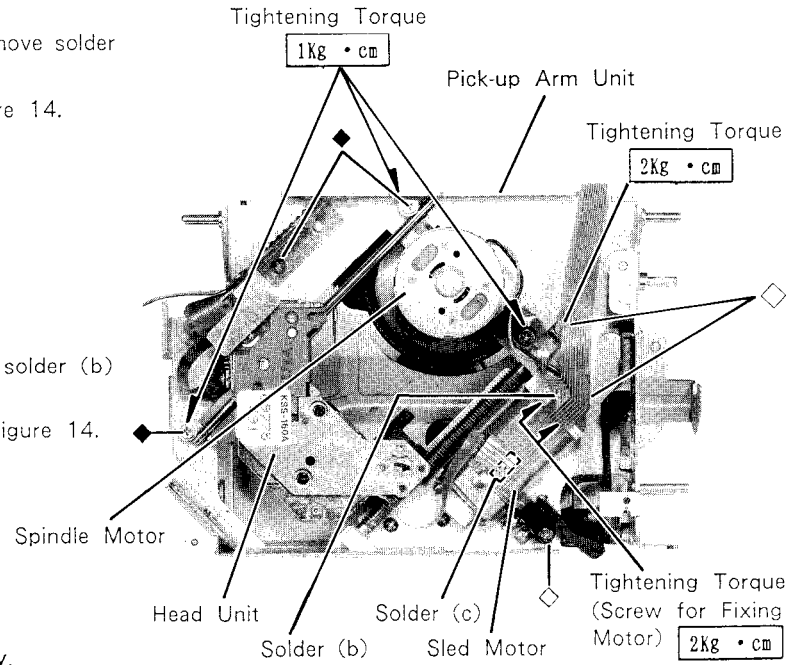


Figure 14

8. Removal of Rivet Loading Cam Assy.

(1) After dismounting rivet loading bracket assy, remove gears (D) and (E) as shown in Figure 11.

(2) Remove one washer shown in Figure 15.

Note :1) Do not loose washer.

2) Remove washer by removing spring at the same time as shown in Figure 16.

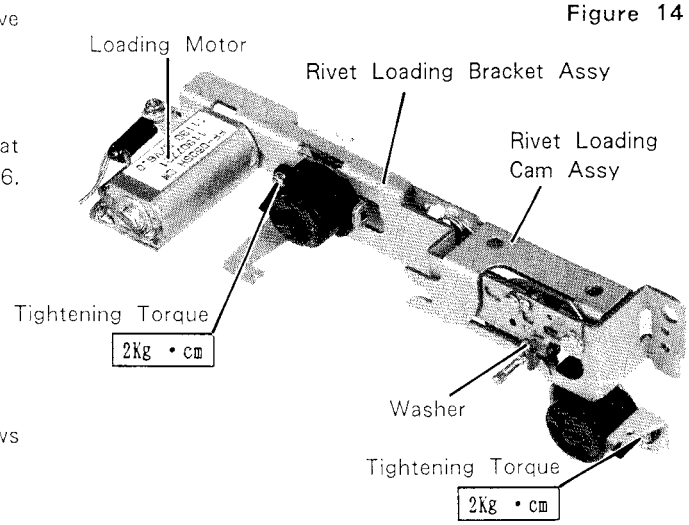


Figure 15

9. Removal of Loading Motor

(1) After removing rivet loading cam, remove 2 screws (△) as shown in Figure 16.

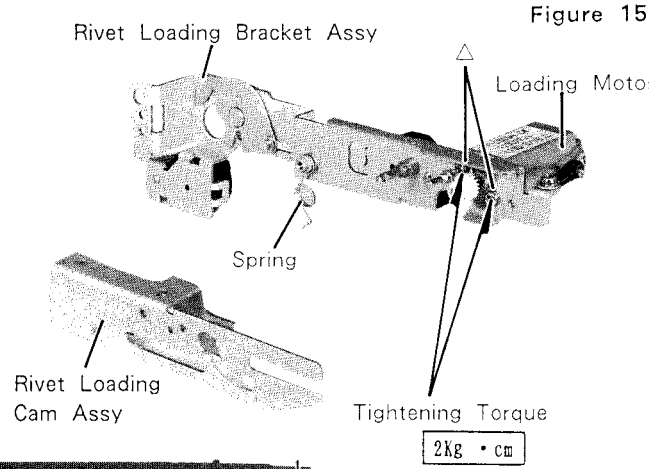


Figure 16

※Caution on Replacing Spindle Motor

1) When mounting spindle motor on pick-up arm unit, fix with a screw at tightening torque of 1.5kg/cm.

2) By pinching gauge, press and insert spindle table into spindle motor shaft. Check to be sure that height of inserted spindle table is 1.55±0.05mm.

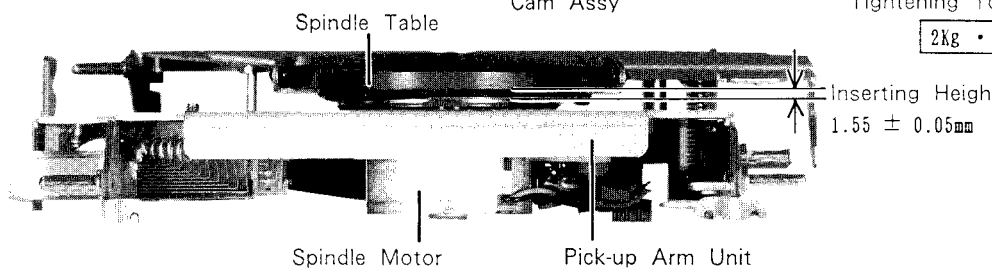


Figure 17

Adjustment Procedures

1. Compact Disc

(1) Connections

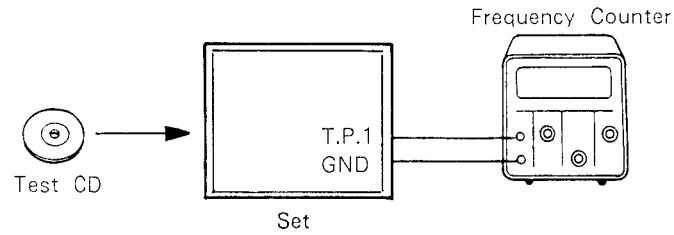


Figure 18

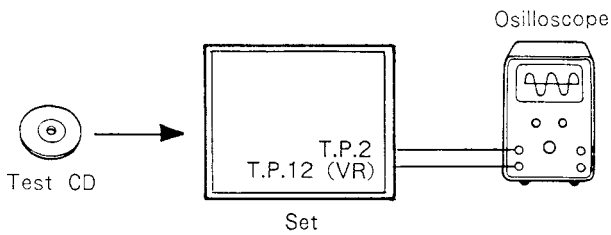


Figure 19

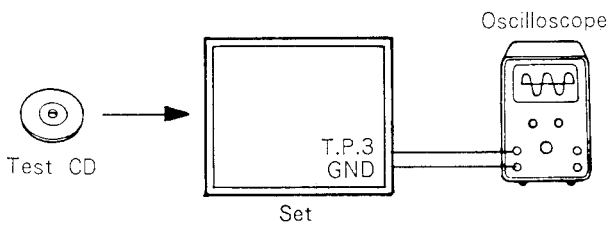


Figure 20

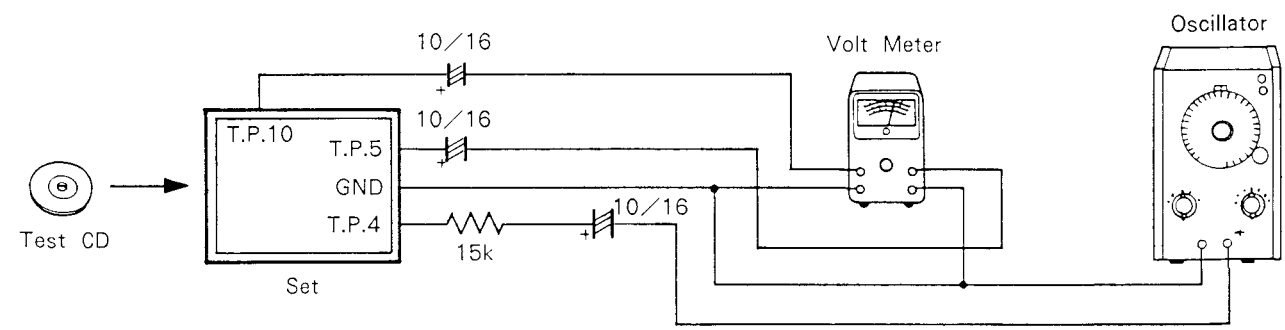


Figure 21

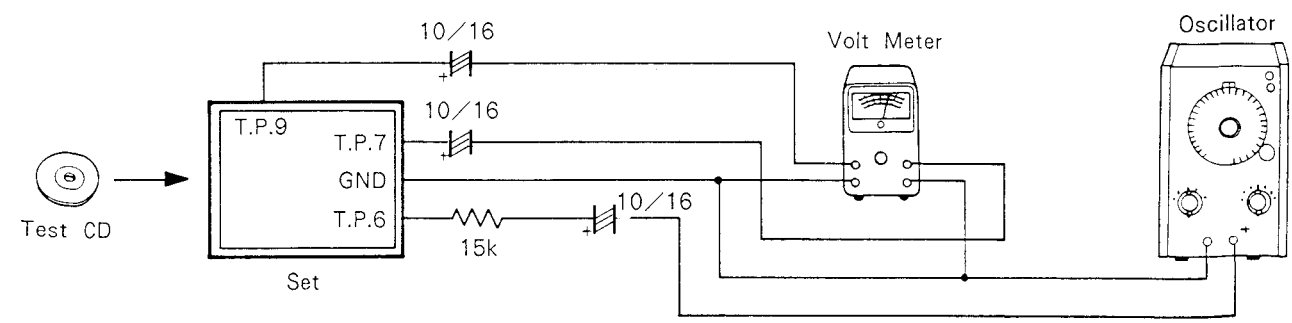
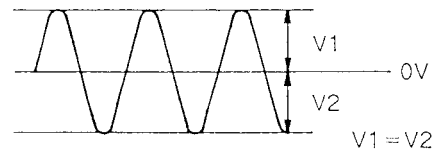


Figure 22

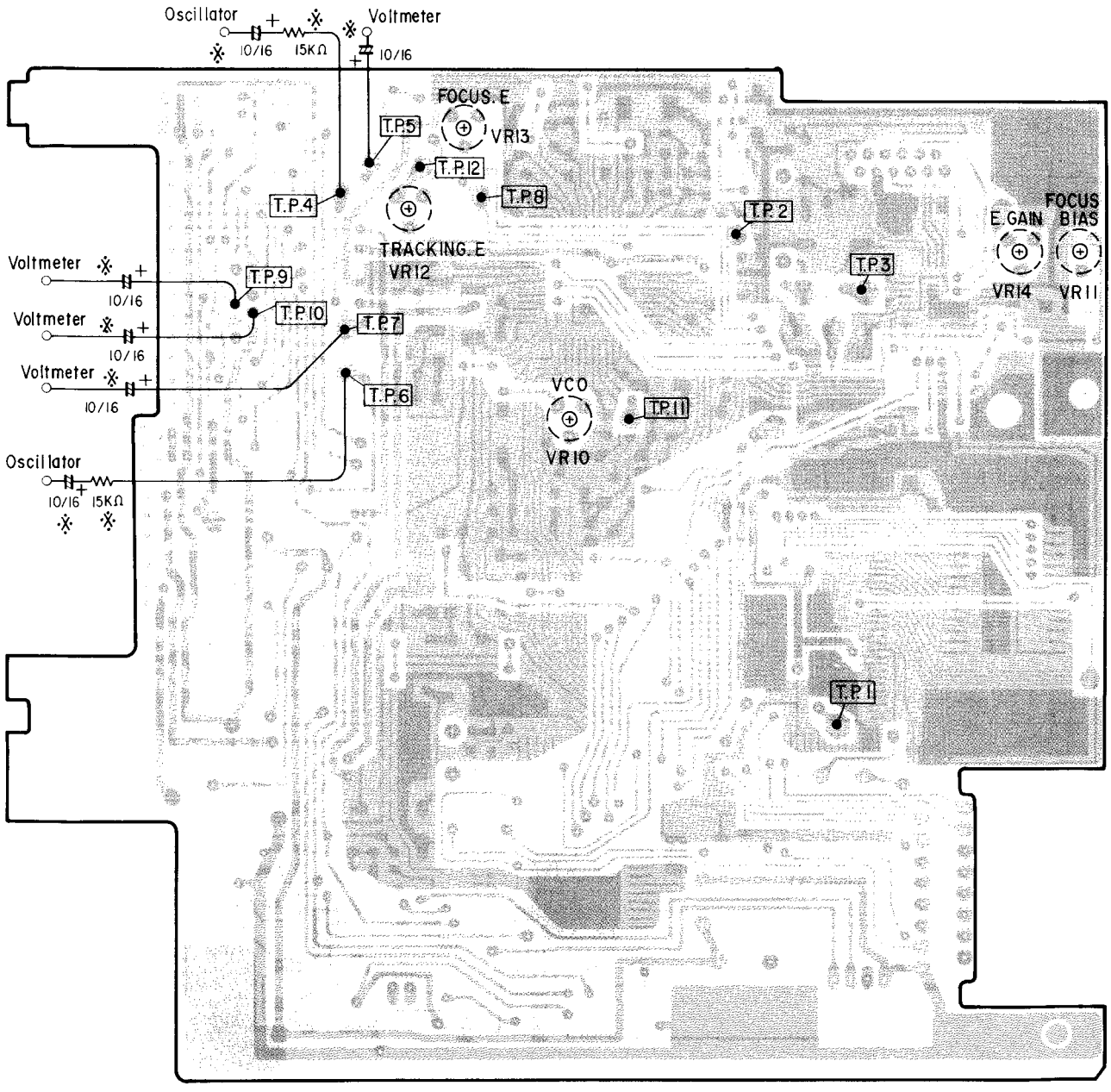
(2) Switch Settings

Power Switch ..... ON
Play/Pause Switch ..... ON
Other Switches ..... OFF

(3) Adjustment Procedures

Step	Description	Connection	Oscillator	Test Point	Adjustment
1	VCO Adjustment	Figure 18	–	T.P.1 T.P.11 T.P.12	In playback mode, connect T.P.11 to VR (T.P.12), and adjust VR010 so that the frequency is 4.32MHz±30kHz.
2	Tracking Balance Adjustment	Figure 19	–	T.P.2	In playback mode, connect T.P.8 to VR (T.P.12), and adjust VR014 so that the oscilloscope waveform is symmetrial above and below, relative to 0V. 
3	Focus Balance Adjustment	Figure 20	–	T.P.3	Adjust VR011 so that the amplitude of oscilloscope waveform is maximum.
4	Focus Gain Adjustment	Figure 21	1kHz 150mV (P-P)	T.P.4 T.P.5 T.P.10	Adjust VR013 so that T.P.10 against T.P.5 is 1V (P-P).
5	Tracking Gain Adjustment	Figure 22	2.4kHz 400mV (P-P)	T.P.6 T.P.7 T.P.9	Adjust VR202 so that T.P.10 against T.P.5 is +6dB.

Adjustment Locations

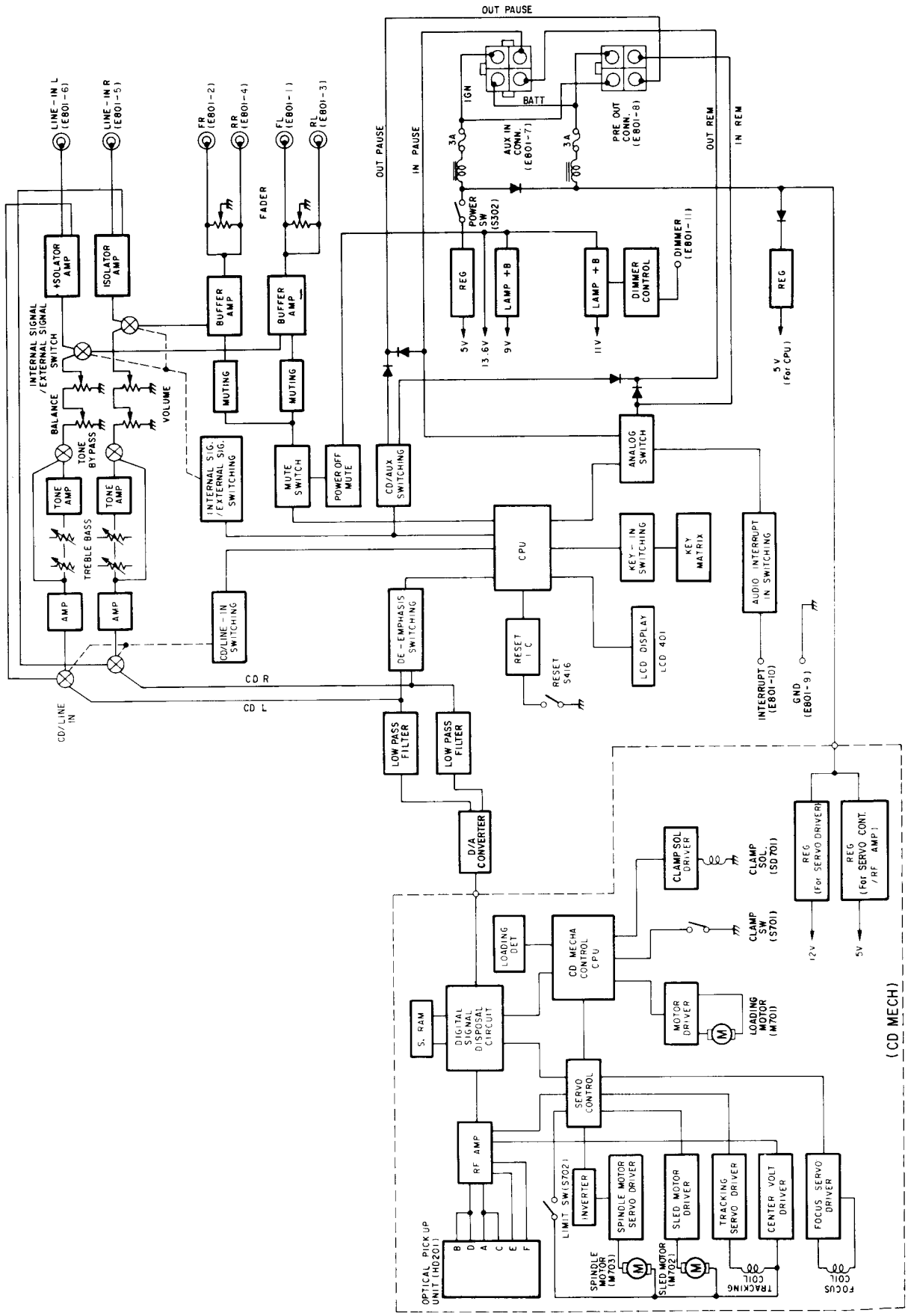


※Parts marked are used for adjustment only.
Always remove the parts after the adjustment.

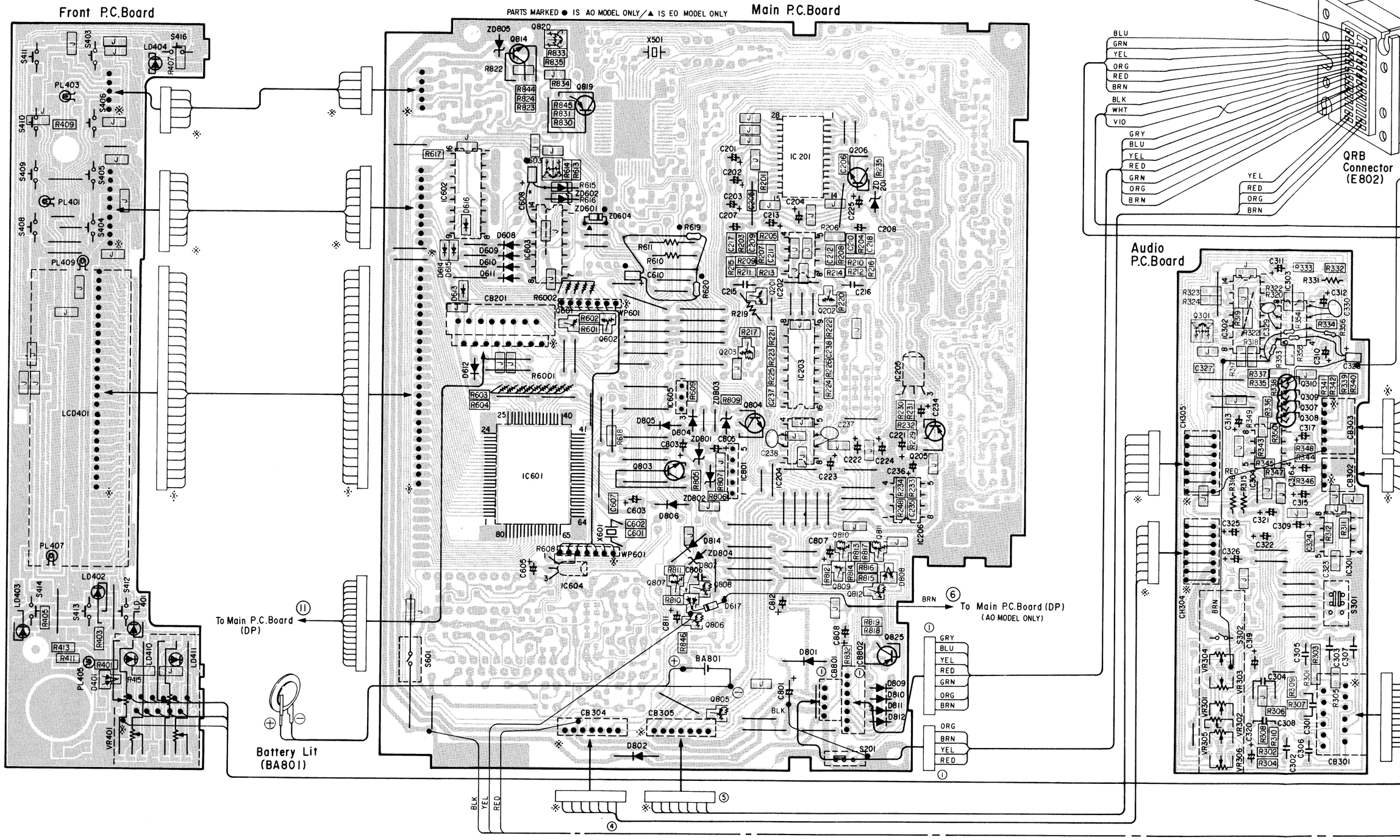
Main P. C. Board (DP)

(Foil Side View)

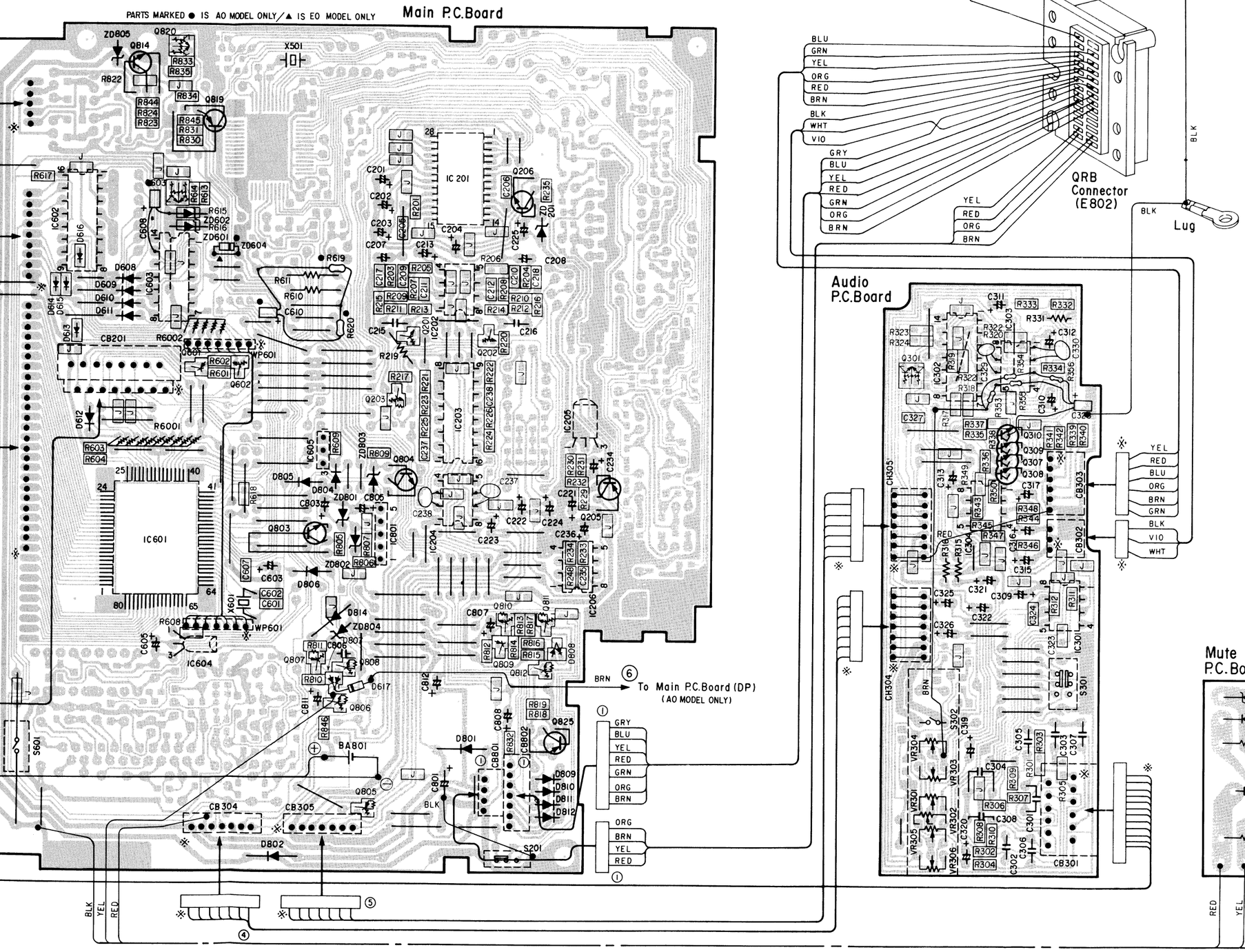
Block Diagram



Parts Layout on P.C. Boards and Wiring Diagram (1/2)



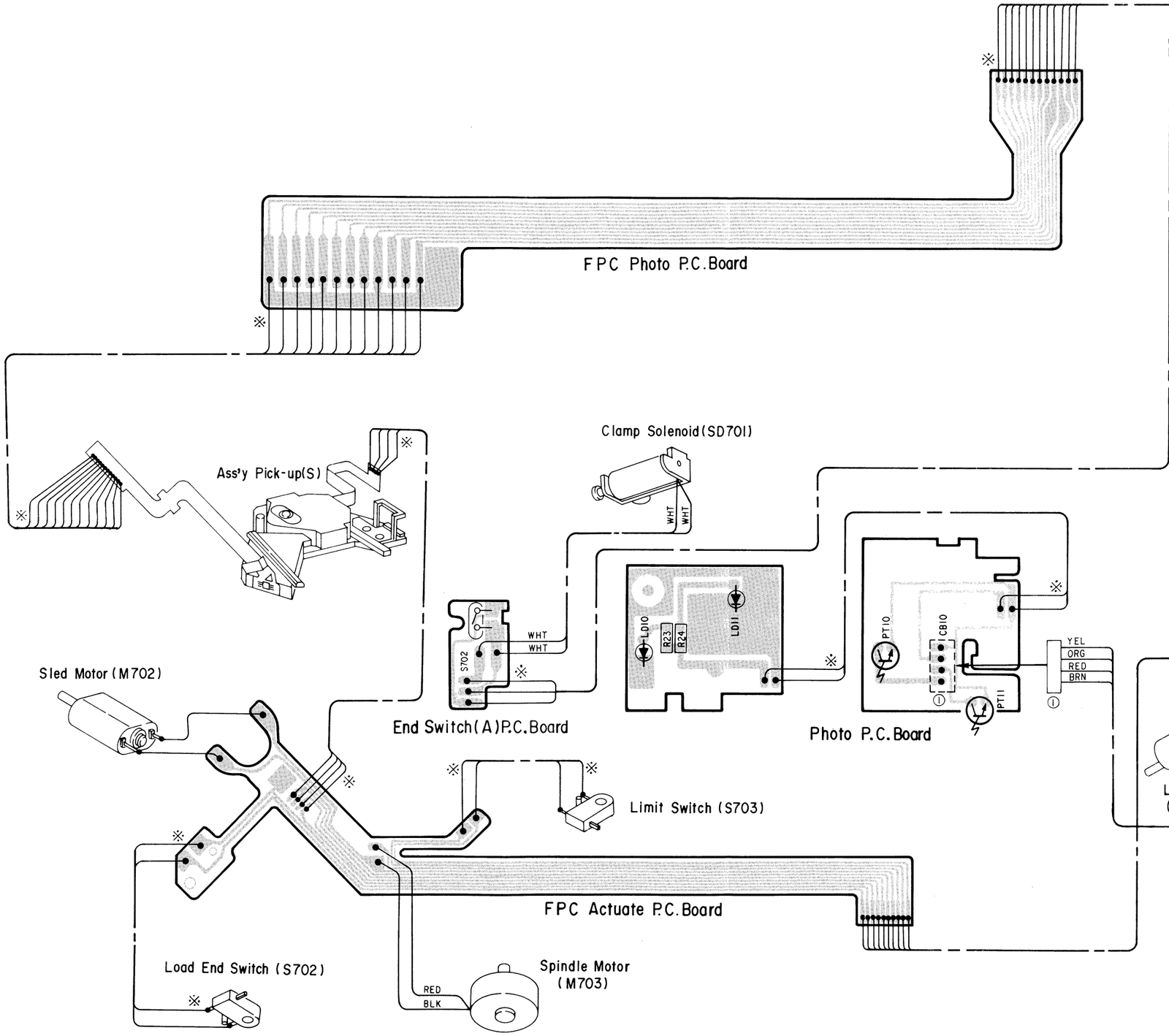
gram (1/2)



BLU ..... Blue
GRN ..... Green
BLK ..... Black
GRY ..... Gray
WHT ..... White
RED ..... Red
BRN ..... Brown
ORG ..... Orange
YEL ..... Yellow
PNK ..... Pink
VIO ..... Violet
GRN／WHT ..... Green／White
GRY／WHT ..... Gray／White
GRY／YEL ..... Gray／Yellow
GRN／YEL ..... Green／Yellow
SHLD ..... Shield

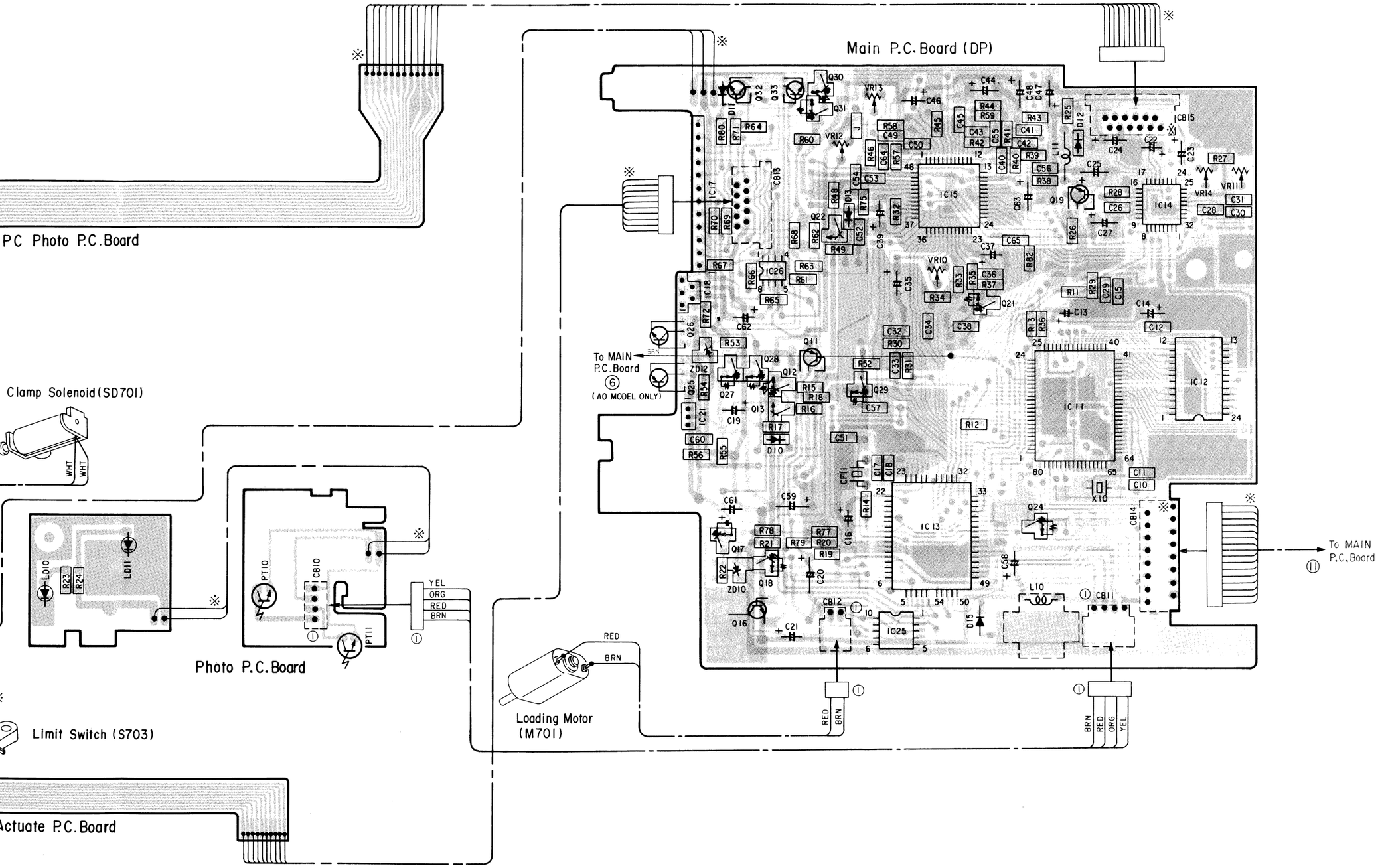
5905

Parts Layout on P.C. Boards and Wiring Diagram (2/2)



5905	5905

agram (2/2)



BLU ..... Blue
GRN ..... Green
BLK ..... Black
GRY ..... Gray
WHT ..... White
RED ..... Red
BRN ..... Brown
ORG ..... Orange
YEL ..... Yellow
PNK ..... Pink
VIO ..... Violet
GRN/WHT ..... Green/White
GRY/WHT ..... Gray/White
GRY/YEL ..... Gray/Yellow
GRN/YEL ..... Green/Yellow
SHLD ..... Shield

Schematic Diagram (1/2)

IC	IC604 IC605	IC201	IC206	IC202	IC205 IC601	IC203	IC204	IC602 IC603	IC301 IC304	IC801	IC302	IC303
Transistor(Q)	Q602	Q206 Q601		Q201 Q202	Q205	Q203		Q808 Q807	Q805, Q806 Q603	Q804 Q809, Q810	Q803 Q811	Q825 Q812	Q301	Q307 Q309	Q308, Q310 Q814, Q819 Q820

MAIN P.C.Board

FRONT P C Board AUDIO P C Board

IC201 μPD6355G D/A CONVERTER

Q206 2SD636

ZD201 HZ7A3L

D/A CONVERTER V/STABILIZER

IC202 NJM4560 Q201 DTC114TU

IC206 NJM4560D Q202 DTC114TU

IC205 M5236L

IC203 TC4052BP

IC204 NJM4560D

Q205 2SB911

Q203 DTC124EU

IC301 NJM4560D

IC304 NJM4560D

IC302 TC4066BP

IC303 NJM4560D

Q307 Q309 FMG1

Q308 Q310 2SD1330

Q301 FMG1

MAIN (D,P) P.C.Board

FRONT P C Board

IC601 94530F01 MICOM

IC602 TC4051BP

IC603 TC4066BP ANALOG SWITCH

IC604 S-8052ALR

IC605 MN1280

Q601 2SA1576

Q602 DTC114T

Q803,804 : 2SD1992

Q804

Q805 DTA124EU

Q806 DTC124EU

Q807 DTA114EU

Q808 DTC124EU

Q809 2SA1576

Q810 DTC124EU

Q811 DTC124EU

Q812 DTC124EU

Q814 2SD1189

Q819 2SB644

Q820 FMG1

IC801 M51953B

Q603 FMG1

MUTE P.C.Board

AUDIO INTERRUPT IN CIRCUIT

REMOTE / PAUSE OUTPUT CIRCUIT

OUTPUT SHORT PROTECTION CIRCUIT

MUTING CIRCUIT

KEY INPUT SWITCHING

CD-STAND-BY SWITCHING

CD/LINE SWITCHING

TONE AMP

BUFFER AMP

CD/LINE INPUT SWITCHING

MUTING

BALANCE

VOLUME

TONE BYPASS

ISOLATOR AMP

AUDIO REGULATOR

LOWPASS FILTER

DE EMPHASIS SWITCHING

1/2 Vcc SUPPLY DRIVER

START CIRCUIT

VOLT STABI START CIRCUIT

ASO PROTECTOR

OVER CURRENT PROTECTOR

ERROR AMP

POWER +5V

V/STABILIZER FOR CPU

LAMP V/STABILIZER

DIMMER CONTROL

RCA JACK (OUTPUT)

AUX IN CONNECTOR

PRE OUT CONNECTOR

E802 CON QR8 SOCKET

E801 CON QR8 PLUG

AO model only

TO DP (MECHA 1)

POWER SW

S201 TUNER/LINE

S302

S601

S404 I/CLEAR

S405 2/PRESET

S406 3/P.S.P

S408 4/REREAT

S409 5/SCAN

S410 6/MIX

S411 DISK/DN

S412 TUNE/DISP

S413 DOWN

S414 UP

LCD401

SEG

model / ⊗	● North American model only	▲ European model only
R819	10K ohm	Not Used
R820	100K ohm	Not Used
C808	10μF/16V	Not Used
C810	22μF/16V	Not Used
D617	MA165	Not Used
ZD604	HZ5.1EB1	Not Used
IC601	94530F02	94530F04

IC201

1		8
2		9
3		10
4	0V	11
5	0V	12
6	6.2V	13
7	0V	14

IC202

1	4.5V	8
2	4.5V	9
3	4.5V	10
4	0V	11
5	4.5V	12
6	4.5V	13
7	4.5V	14
8	8.5V	

IC203

1	4.5V	8
2	(4.5V)/0.2V	9
3	4.5V	10
4	0.2V	11
5	4.5V	12
6	0V	13
7	0V	14
8	0V	

IC204

1	4.5V	8
2	4.5V	9
3	4.5V	10
4	0V	11
5	4.5V	12
6	4.5V	13
7	4.5V	14
8	8.5V	

IC206

1	4.5V	8
2	4.5V	9
3	4.5V	10
4	0V	11
5	1.3V	12
6	1.1V	13
7	4V	14
8	8.5V	

IC301

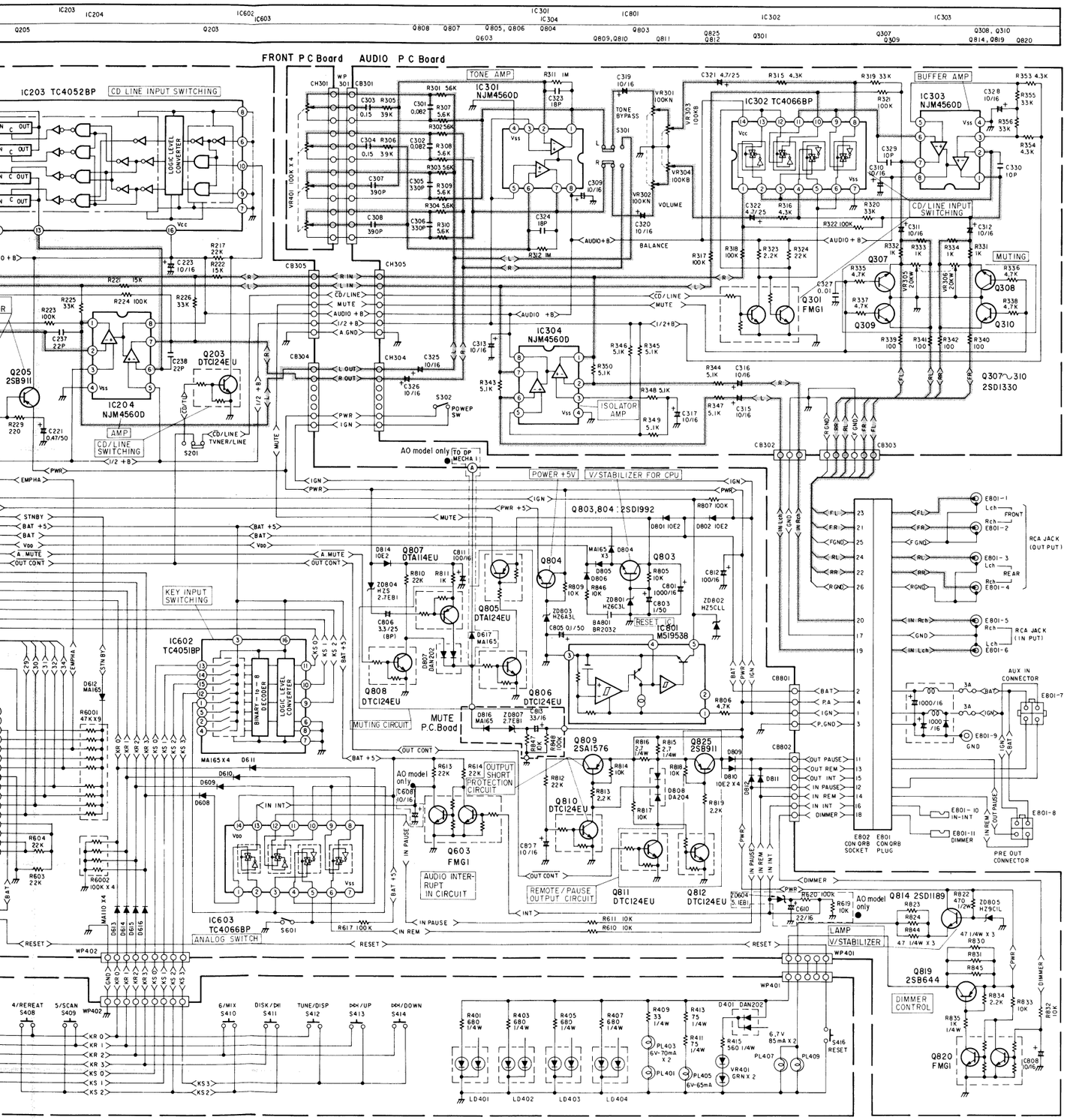
1	4.5V	5
2	4.5V	6
3	4.5V	7
4	0V	8

IC302

1	4.5V	8
2	4.5V	9
3	4.5V	10
4	4.5V	11
5	7.7V/0V	12
6	7.7V/0V	13
7	0V	14

IC601

1		21
2		22
3		23
4		24
5		25
6		26
7		27
8		28
9		29
10		30
11		31
12		32
13		33
14		34
15		35
16		36
17		37
18		38
19		39
20		40



IC201

1		8	0V	15	0V	22	
2		9	0V	16	6.2V	23	0V
3		10	1.3V	17	2.6V/5.2V	24	0V
4	0V	11	2.6V/5.2V	18	2.6V/5.2V	25	0V
5	0V	12	2.6V/0V	19	3.6V	26	6.2V
6	6.2V	13	6.2V	20	2.6V	27	0V
7	0V	14	0V	21	3.6V	28	6.2V

	E	C	B
Q601	0V	0V	5.1V
Q602	5.1V	5.1V	4.4V
Q603	0V	5.1V/0V	0V/2.9V
		0V/2.9V	13.7V/0V

IC202

1	4.5V	5	4.5V
2	4.5V	6	4.5V
3	4.5V	7	4.5V
4	0V	8	4.5V
5	4.5V		
6	4.5V		
7	4.5V		
8	8.5V		

IC205

1	13.7V
2	8.5V
3	13V

IC207

1	4.5V	5	4.5V
2	4.5V	6	4.5V
3	4.5V	7	4.5V
4	0V	8	4.5V

	E	C	B	MODE
Q201	0V	0V/4.3V	1V/0V	ON/OFF
Q202	0V	0V/4.3V	1V/0V	ON/OFF
Q203	0V	8.5V/0V	0V/0.5V	CD/TU
Q205	13.7V	8.5V	13.1V	
Q206	6.2V	8.5V	6.8V	

IC203

1	4.5V	9	8.5V/0V
2	(4.5V)/0.2V	10	8.5V/0V
3	4.5V	11	0.2V
4	0.2V	12	4.5V
5	4.5V	13	4.5V
6	0V	14	4.5V
7	0V	15	(4.5V)/0.2V
8	0V	16	8.5V

IC303

1	4.5V	5	4.5V
2	4.5V	6	4.5V
3	4.5V	7	4.5V
4	0V	8	8.5V

	E	C	B	MODE
Q303	5.8V	13.3V	6.4V	
Q304	5V	13.7V	5.6V	
Q305	13.3V	0V/13.3V	13.3V/0V	ON/OFF
Q306	0V	13.3V/0V	0V/6.5V	ON/OFF
Q307	13.1V	0V	13.3V	
Q308	0V	0V/0.7V	5V/0V	ON/OFF
Q309	13.7V	0V	13.6V	
Q310	0V	13.7V	0V	
Q311	0V	9.4V/0V	0V/5.1V	ON/OFF
Q312	0V	0V/13.7V	9.4V/0V	ON/OFF
Q314	9.5V	13.6V	10.1V	
Q319	13.6V	11V/13.4V	13.6V/12.8V	ON/OFF
Q320	0V	13.6V/0V	0V/9.5V	ON/OFF
		0V/9.6V	9.6V/0V	
Q325	13.7V	13.6V/0V	13V/13.7V	

IC204

1	4.5V	5	4.5V
2	4.5V	6	4.5V
3	4.5V	7	4.5V
4	0V	8	4.5V
5	4.5V		
6	4.5V		
7	4.5V		
8	8.5V		

IC304

1	4.5V	5	4.5V
2	4.5V	6	4.5V
3	4.5V	7	4.5V
4	0V	8	8.5V

	E	C	B	MODE
Q301	0V	7.7V/0V	0V/5V	ON/OFF
		0V/8.3V	7.7V/0V	
Q307	0V	0V	0.7V/0V	ON/OFF
Q308	0V	0V	0.7V/0V	ON/OFF
Q309	0V	0V	0.7V/0V	ON/OFF
Q310	0V	0V	0.7V/0V	ON/OFF

IC206

1	4.5V	5	4.5V
2	4.5V	6	4.5V
3	4.5V	7	4.5V
4	0V	8	8V
5	1.3V		
6	1.1V		
7	8V		
8	8.5V		

IC604

1	5V
2	5V
3	0V

IC605

1	5.1V
2	5.1V
3	0V

IC801

1	8.7V
2	0V
3	0V
4	1.2V
5	4.8V

IC602

1		9	
2		10	
3	5.1V	11	
4		12	
5		13	
6	0V	14	5.2V/0V
7	0V	15	5.1V/0V
8	0V	16	5.1V

IC603

1		8	
2		9	
3		10	
4		11	
5	5.1V/0V	12	5.2V/0V
6	5.2V/0V	13	5.1V/0V
7	0V	14	5.1V

IC301

1	4.5V	5	4.5V
2	4.5V	6	4.5V
3	4.5V	7	4.5V
4	0V	8	8.5V

IC302

1	4.5V	5	4.5V
2	4.5V	6	4.5V
3	4.5V	7	4.5V
4	0V	8	8.5V

IC601

1		21		41	61
2		22		42	62
3		23		43	4.8V 63
4		24		44	5V 64
5		25	5V	45	65
6		26	5V	46	5.1V/0V 66
7		27	2.5V	47	5.1V 67
8		28	2.5V	48	5.1V/0V 68 5V
9		29		49	5.1V/0V 69
10		30		50	70
11		31		51	5V/0V 71
12		32		52	72
13		33	0V	53	5V 73
14		34		54	5V 74
15		35	1.9V/0V	55	0V 75
16		36	1V/0V	56	76
17		37		57	77
18		38	5.1V	58	78
19		39		59	79
20		40		60	80

[Measuring Conditions]
- Power Supply : 14V DC
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point : Between Ground
- Condition : CD YEDS 18(Play)
  FM 98.1MHz
  AM 1000kHz

model / ✻	● North American model only	▲ European model only
R619	10K ohm	Not Used
R620	100K ohm	Not Used
C608	10μF/16V	Not Used
C610	22μF/16V	Not Used
D617	MA165	Not Used
ZD604	HZ5.1EB1	Not Used
IC601	94530P02	94530P04

NOTES:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1,000,000}$

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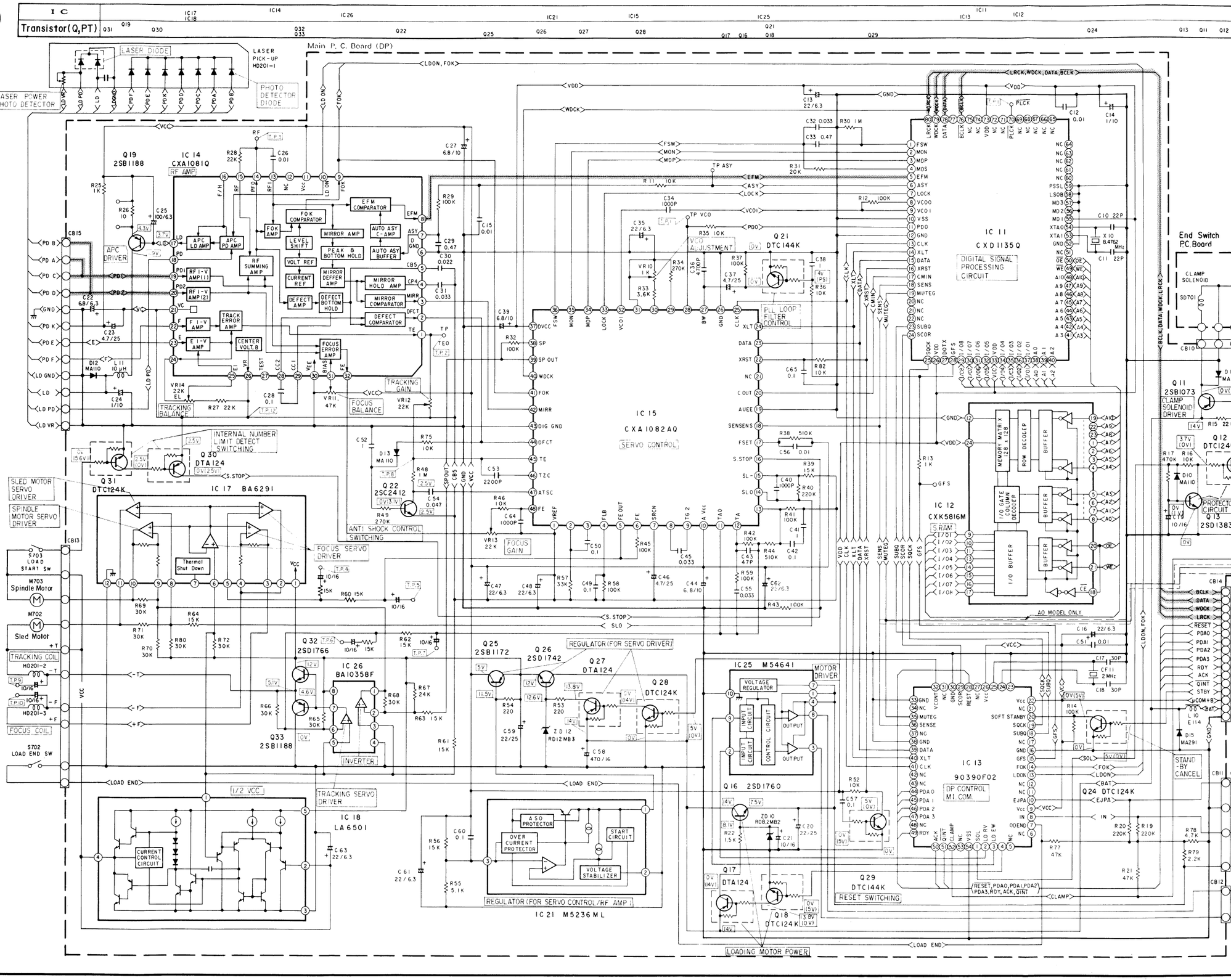
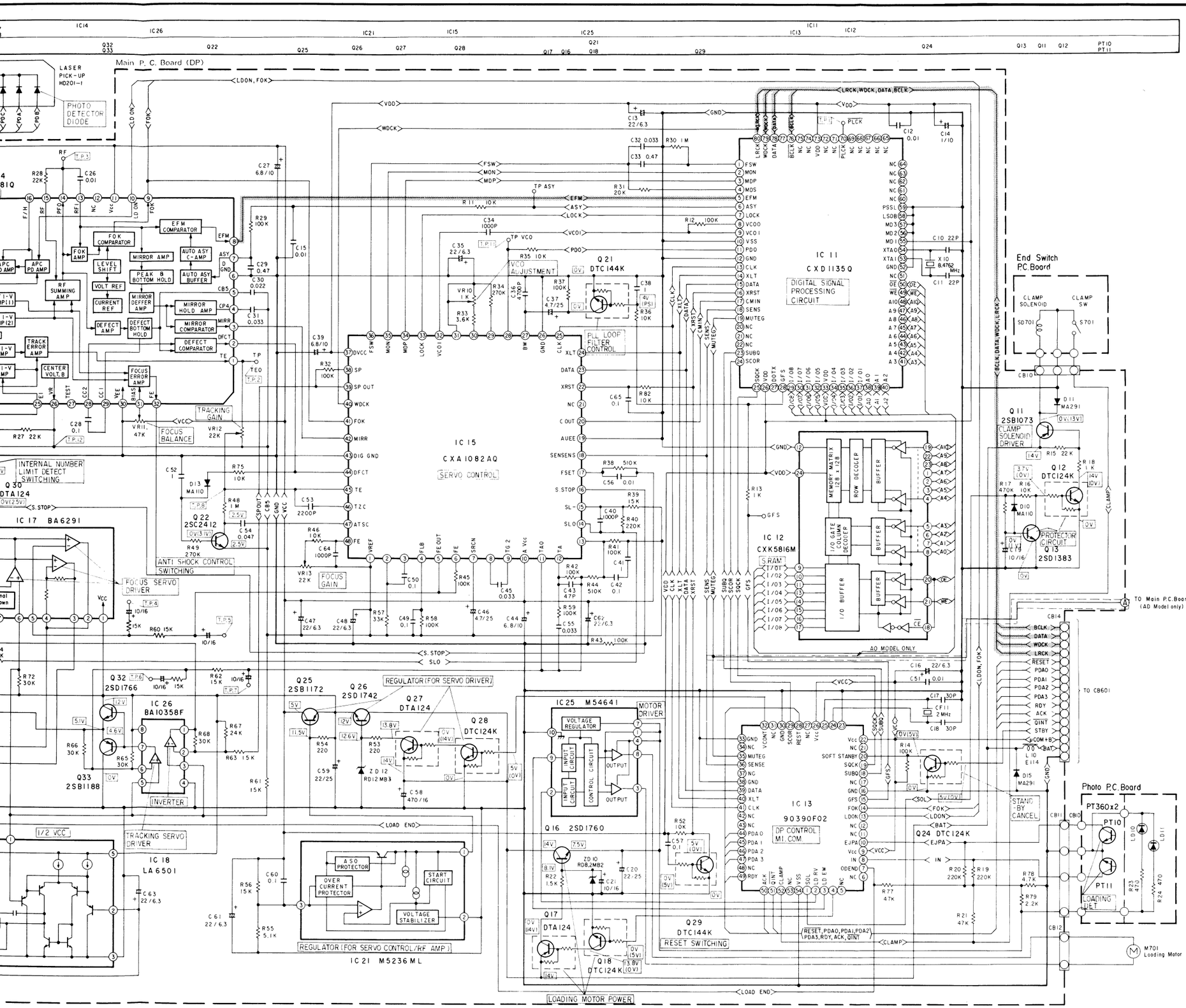
Schematic Diagram (2/2)





IC 11

1	0V	17	PS	33	5V	49	PS	65	0V
2	4.9V	18	0V	34	PS	50	PS	66	0V
3	PS	19	5V	35	PS	51	PS	67	0V
4	PS	20	PS	36	PS	52	0V	68	0V
5	PS	21	PS	37	PS	53	PS	69	PS
6	PS	22	PS	38	PS	54	PS	70	PS
7	5V	23	PS	39	PS	55	5V	71	PS
8	PS	24	PS	40	PS	56	0V	72	0V
9	PS	25	PS	41	PS	57	0V	73	5V
10	0V	26	5V	42	PS	58	0V	74	0V
11	PS	27	PS	43	PS	59	0V	75	PS
12	0V	28	5V	44	PS	60	PS	76	PS
13	5V	29	PS	45	PS	61	PS	77	PS
14	5V	30	PS	46	PS	62	PS	78	PS
15	5V	31	PS	47	PS	63	0V	79	PS
16	5V	32	4.9V	48	PS	64	0V	80	PS

IC 12

1	PS	13	PS
2	PS	14	PS
3	PS	15	PS
4	PS	16	PS
5	PS	17	PS
6	PS	18	PS
7	PS	19	PS
8	PS	20	PS
9	PS	21	PS
10	PS	22	PS
11	PS	23	PS
12	0V	24	5V

IC 13

1	4.8V	19	PS	37	0V
2	0V	20	0V	38	0V
3	5V	21	0V	39	5V
4	0V	22	5V	40	5V
5	0V	23	0V	41	5V
6	0V	24	PS	42	0V
7	0V	25	PS	43	0V
8	0V	26	5V	44	PS
9	5V	27	5V	45	PS
10	0V	28	5V	46	PS
11	0V	29	PS	47	PS
12	0V	30	0V	48	0V
13	0V	31	0V	49	5V
14	5V	32	5V	50	5V
15	5V	33	0V	51	PS
16	0V	34	0V	52	0V
17	0V	35	0V	53	0V
18	PS	36	5V	54	0V

IC 14

1	2.5V	17	3.7V
2	PS	18	0.2V
3	PS	19	2.5V
4	1.8V	20	2.5V
5	1V	21	2.5V
6	0V	22	2.5V
7	2.5V	23	2.5V
8	0V	24	1.9V
9	5V	25	2.1V
10	0V	26	2.5V
11	5V	27	2.4V
12	1.8V	28	1V
13	0V	29	1.4V
14	3.2V	30	0V
15	2.5V	31	2.6V
16	3.6V	32	2.5V

IC 15

1	2.5V	17	0.8V	33	5V
2	2.5V	18	5V	34	PS
3	2.4V	19	0V	35	5V
4	2.5V	20	0V	36	2.5V
5	2.5V	21	5V	37	5V
6	3V	22	5V	38	2.5V
7	2.6V	23	5V	39	1.9V
8	2.5V	24	5V	40	PS
9	2.5V	25	5V	41	5V
10	5V	26	0V	42	PS
11	2.5V	27	2.5V	43	0V
12	2.5V	28	2.5V	44	PS
13	2.5V	29	2.3V	45	2.5V
14	2.7V	30	2.4V	46	2.5V
15	2.5V	31	3.6V	47	2.5V
16	0V	32	PS	48	2.5V

IC 17

1	12V		
2	5.8V		
3	5.5V		
4	5.8V		
5	5.6V		
6	5.6V		
7	0.3V		
8	5.6V		
9	4.5V		
10	6.8V		
11	5.3V		
12	0V		

IC 25

1	6.1V		
2	0V		
3	0V		
4	6.1V		
5	—		
6	—		
7	6.1V		
8	0V		
9	0V		
10	0V		

IC 26

1	4.8V		
2	5.6V		
3	5.8V		
4	0V		
5	5.6V		
6	5.6V		
7	4.6V		
8	12V		

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

Electrical Parts List

Resistor : Carbon resistors under 1/4 watts are not mentioned in the parts list, please confirm them by schematic diagram.
uF = microfarads, pF = picofarads

Abbreviations

RES. = Resistor	CAP. = Capacitor
C.F. = Carbon Film	ELY. = Electrolytic
M.F. = Metal Film	CER. = Ceramic
M.O. = Metal Oxide Film	MYL. = Mylar
M.P. = Metal Plate	TAN. = Tantalum
TR. = Transistor	POLY. = Polystyrol
TRANS. = Transformer	PP. = Polypropylene
CP. = Chip	PLT. = Polyethylene

Symbol No.	Part No.	Description
Main P. C. Board (DP)		
IC's		
IC11	51T84719F02	CXD11350Q
IC12	51T90640F01	CXK5816M
or	51T84723F02	LC3516AML
IC13	51T90390F02	90390F02
or	51T92369F04	92369F04
IC14	51T92280F01	CXA1081Q
IC15	51T84119F01	CXA1082AQ
IC17	51T92303F01	BA6291
IC18	51T90889F01	LA6501
IC21	51T90890F01	CP., M5236ML
IC25	51T92373F02	M54641
IC26	51T92693F01	BA10358F
or	51T93333F01	NJM2904M
Transistors		
Q11	48T93351F01	CP., 2SB1073
Q12	48T62967F03	CP., DTC124K
Q13	48T81552F01	CP., 2SD1383K
Q16	48T92368F01	2SD1760
Q17	48T62966F03	CP., DTA124
Q18	48T62967F03	CP., DTC124K
Q19	48T80612F01	CP., 2SB1188
Q21	48T62967F04	CP., DTC144K
Q22	48T63417F01	CP., 2SC2412K
Q24	48T62967F03	CP., DTC124K
Q25	48T82870F01	2SB1172A
Q26	48T74164F01	2SD1742
Q27	48T62966F03	CP., DTA124
Q28	48T62967F03	CP., DTC124K
Q29	48T62967F04	CP., DTC144K
Q30	48T62966F03	CP., DTA124
Q31	48T62967F03	CP., DTC124K
Q32	48T80615F01	CP., 2SD1766
Q33	48T80612F01	CP., 2SB1188
Diodes		
D10	48T90681F01	CP., MA110
D11	48T74692F02	CP., MA291
D12	48T90681F01	CP., MA110
D13	48T90681F01	CP., MA110
D15	48T74692F02	CP., MA291
ZD10	48T62934F34	CP., Zener, RD8.2MB2
ZD12	48T62934F47	CP., Zener, RD12MB3
Coils/Crystal/Filter		
L10	25T47510F04	Choke Filter
L11	24T51656F22	Inductor, 10 μ H
X10	48T72757F01	Crystal, 8.4672MHz
CF11	91T72630F01	CER., Filter, CSA2.00MG
Capacitors		
C10	08S65128F19	CP., 22pF
C11	08S65128F19	CP., 22pF
C12	08S65128F69	CP., 0.01 μ F
C13	23T74180F01	CP., ELY., 22 μ F/6.3V
C14	23T74181F11	CP., T.T 1 μ F/10V
C15	08S65128F69	CP., 0.01 μ F
C16	23T74180F01	CP., ELY., 22 μ F/6.3V
C17	08S65128F22	CP., 30pF
C18	08S65128F22	CP., 30pF
C19	23T74180F03	CP., ELY., 10 μ F/16V
C20	23T74180F06	CP., ELY., 22 μ F/25V
C21	23T74180F03	CP., ELY., 10 μ F/16V
C22	23T74181F32	CP., T.T 6.8 μ F/6.3V
C23	23T74180F05	CP., ELY., 4.7 μ F/25V
C24	23T74181F11	CP., T.T 1 μ F/10V
C25	23T74180F02	CP., ELY., 100 μ F/6.3V
C26	08S65128F69	CP., 0.01 μ F
C27	23T74181F33	CP., T.T 6.8 μ F/10V
C28	08S53332F57	CP., 0.1 μ F
C29	08T81833F04	CP., 0.47 μ F

Symbol No.	Part No.	Description		
C30	08S65128F72	CP., 0.022 μ F		
C31	08S65128F73	CP., 0.033 μ F		
C32	08S65128F73	CP., 0.033 μ F		
C33	08T81833F04	CP., 0.47 μ F		
C34	08S65128F57	CP., 1000pF		
C35	23T74180F01	CP., ELY., 22 μ F/6.3V		
C36	08S65128F65	CP., 4700pF		
C37	23T74180F05	CP., ELY., 4.7 μ F/25V		
C38	08T81833F03	CP., 1 μ F		
C39	23T74181F33	CP., T.T 6.8 μ F/10V		
C40	08S65128F57	CP., 1000pF		
C41	08T81833F03	CP., 1 μ F		
C42	08S65128F76	CP., 0.1 μ F		
C43	08S65128F27	CP., 47pF		
C44	23T74181F33	CP., T.T 6.8 μ F/10V		
C45	08S53332F53	CP., 0.033 μ F		
C46	23T74180F05	CP., ELY., 4.7 μ F/25V		
C47	23T74180F01	CP., ELY., 22 μ F/6.3V		
C48	23T74180F01	CP., ELY., 22 μ F/6.3V		
C49	08S65128F76	CP., 0.1 μ F		
C50	08S65128F76	CP., 0.1 μ F		
C51	08S65128F69	CP., 0.01 μ F		
C52	08T81833F03	CP., 1 μ F		
C53	08S65128F61	CP., 2200pF		
C54	08S65128F74	CP., 0.047 μ F		
C55	08S65128F73	CP., 0.033 μ F		
C56	08S65128F69	CP., 0.01 μ F		
C57	08S53332F57	CP., 0.1 μ F		
C58	23C42170G30	CP., ELY., 470 μ F/16V		
C59	23T74180F06	CP., ELY., 22 μ F/25V		
C60	08S53332F57	CP., 0.1 μ F		
C61	23T74180F01	CP., ELY., 22 μ F/6.3V		
C62	23T74180F01	CP., ELY., 22 μ F/6.3V		
C63	23T74180F01	CP., ELY., 22 μ F/6.3V		
C64	08S65128F57	CP., 1000pF		
C65	08S53332F57	CP., 0.1 μ F		
Resistors		(All resistors are chip 1/16W±5% unless otherwise noted.)		
R11	06S64995F77	10k ohm		
R12	06S64996F02	100k ohm		
R13	06S64995F53	1k ohm		
R14	06S64996F02	100k ohm		
R15	06S64995F85	22k ohm		

Symbol No.	Part No.	Description		
R16	06S64995F77	10k ohm		
R17	06S64996F18	470k ohm		
R18	06T70072F53	1k ohm 1/4W		
R19	06S64996F10	220k ohm		
R20	06S64996F10	220k ohm		
R21	06S64995F93	47k ohm		
R22	06S64995F57	1.5k ohm		
R25	06S64995F53	1k ohm		
R26	06S64995F05	10 ohm		
R27	06S61995F85	22k ohm		
R28	06S64995F85	22k ohm		
R29	06S64996F02	100k ohm		
R30	06S64996F26	1M ohm		
R31	06S64995F84	20k ohm		
R32	06S64996F02	100k ohm		
R33	06S64995F66	3.6k ohm		
R34	06S64996F12	270k ohm		
R35	06S64995F77	10k ohm		
R36	06S64995F77	10k ohm		
R37	06S64996F02	100k ohm		
R38	06S64996F19	510k ohm		
R39	06S64995F81	15k ohm		
R40	06S64996F10	220k ohm		
R41	06S64996F02	100k ohm		
R42	06S64996F02	100k ohm		
R43	06S64996F02	100k ohm		
R44	06S64996F19	510k ohm		
R45	06S64996F02	100k ohm		
R46	06S64995F77	10k ohm		
R48	06S64996F26	1M ohm		
R49	06S64996F12	270k ohm		
R52	06S64995F77	10k ohm		
R53	06T70072F37	220 ohm 1/4W		
R54	06T70072F37	220 ohm 1/4W		
R55	06S64995F70	5.1k ohm		
R56	06S64995F81	15k ohm		
R57	06S64995F89	33k ohm		
R58	06S64996F02	100k ohm		
R59	06S64996F02	100k ohm		
R60	06S64995F81	15k ohm		
R61	06S64995F81	15k ohm		
R62	06S64995F81	15k ohm		
R63	06S64995F81	15k ohm		
R64	06S64995F81	15k ohm		
R65	06S64995F88	30k ohm		
R66	06S64995F88	30k ohm		
R67	06S64995F86	24k ohm		
R68	06S64995F88	30k ohm		
R69	06S64995F88	30k ohm		
R70	06S64995F88	30k ohm		

Symbol No.	Part No.	Description		
R71	06S64995F88	30k ohm		
R72	06S64995F88	30k ohm		
R75	06S64995F77	10k ohm		
R77	06S64995F93	47k ohm		
R78	06S64995F69	4.7k ohm		
R79	06S64995F61	2.2k ohm		
R80	06S64995F88	30k ohm		
R82	06S64995F77	10k ohm		
VR10	18T93996F07	Variable, 1k ohm		
VR11	18T93996F17	Variable, 47k ohm		
VR12	18T93996F15	Variable 22k ohm		
VR13	18T93996F15	Variable, 22k ohm		
VR14	18T93996F15	Variable, 22k ohm		
Photo P. C. Board				
Transistors/LEDs/Resistors				
PT10	48T92913F01	Photo, PT360		
PT11	48T92913F01	Photo, PT360		
LD10	48T92912F01	LED, SLN-210RC (RED)		
LD11	48T92912F01	LED, SLN-210RC (RED)		
R23	06S53330F45	CP., 470 ohm 1/8W		
R24	06S53330F45	CP., 470 ohm 1/8W		
Main P. C. Board				
IC's				
IC201	51T92299F01	μ PD6355G		
IC202	51T73718F02	NJM4560D		
IC203	51T68387F01	TC4052BP		
IC204	51T73718F02	NJM4560D		
IC205	51T93222F01	M5236L		
IC206	51T73718F02	NJM4560D		
● IC601	51T94530F02	94530F02		
▲ IC601	51T94530F04	94530F04		
IC602	51T60226F01	TC4051BP		
IC603	51T47739F01	TC4066BP		
IC604	51T92166F01	S-8052ALR		
IC605	51T72309F01	MN1280		
IC801	51T74156F01	M51953BL		
Transistors				
Q201	48T94606F05	CP., DTC114TU		
Q202	48T94606F05	CP., DTC114TU		
Q203	48T94606F03	CP., DTC124EU		
Q205	48T70213F01	2SB911M		
Q206	48S40627U04	2SD636		

Symbol No.	Part No.	Description		
Q601	48T94581F01	CP., 2SA1576		
Q602	48T94606F05	CP., DTC114TU		
Q603	48T73888F08	CP., FMG1		
Q803	48S42455F01	2SD638		
Q804	48S42455F01	2SD638		
Q805	48T94606F53	CP., DTA124EU		
Q806	48T94606F03	CP., DTC124EU		
Q807	48T94606F56	CP., DTA114EU		
Q808	48T94606F03	CP., DTC124EU		
Q809	48T94581F01	CP., 2SA1576		
Q810	48T94606F03	CP., DTC124EU		
Q811	48T94606F03	CP., DTC124EU		
Q812	48T94606F03	CP., DTC124EU		
Q814	48T80055F01	2SD1189		
Q819	48T47866F02	2SB644		
Q820	48T73888F08	CP., FMG1		
Q825	48T70213F01	2SB911M		
Diodes				
D608	48T44813F01	MA165TA		
or	48T68828F01	1SS133		
D609	48T44813F01	MA165TA		
or	48T68828F01	1SS133		
D610	48T44813F01	MA165TA		
or	48T68828F01	1SS133		
D611	48T44813F01	MA165TA		
or	48T68828F01	1SS133		
D612	48T44813F01	MA165TA		
or	48T68828F01	1SS133		
D613	48T90681F01	CP., MA110		
D614	48T90681F01	CP., MA110		
D615	48T90681F01	CP., MA110		
D616	48T90681F01	CP., MA110		
● D617	48T44813F02	MA165		
D801	48C40235G02	10E2		
D802	48C40235G02	10E2		
D804	48T44813F01	MA165TA		
or	48T68828F01	1SS133		
D805	48T44813F01	MA165TA		
or	48T68828F01	1SS133		
D806	48T44813F01	MA165TA		
or	48T68828F01	1SS133		
D807	48T94608F03	CP., DAN202U		
D808	48T94608F01	CP., DA204U		
D809	48C40235G02	10E2		
D810	48C40235G02	10E2		
D811	48C40235G02	10E2		
D812	48C40235G02	10E2		
D814	48C40235G02	10E2		
ZD201	48T83128F12	Zener, HZS7A3L		

Notes : ● : For North American model only (AO), ▲ : For European model only (EO), Others : Common.

Symbol No.	Part No.	Description		
ZD601	48T68697F20	Zener, HZS5.6EB1		
ZD602	48T68697F20	Zener, HZS5.6EB1		
● ZD604	48T68698F17	Zener, HZS5.1EB1		
ZD801	48T83128F09	Zener, HZS6C3L		
ZD802	48T91071F12	Zener, HZS5CLL		
ZD803	48T83128F03	Zener, HZS6A3L		
ZD804	48T68697F01	Zener, HZS2.7EB1		
ZD805	48T83128F25	Zener, HZS9C1L		
Switches/Crystal				
S201	40T64365F01	Switch, Slide (TUNER/LINE)		
S601	40T72772F01	Switch, TR-80B10FA		
X601	91T92651F01	Crystal, 4.19MHz		
Capacitors				
C201	23T74437F32	TAN., 10 μF/16V		
C202	23S57422F11	ELY., 22 μF/16V		
C203	23S61523F09	ELY., 22 μF/10V		
C204	23T74437F32	TAN., 10 μF/16V		
C205	08T72783F19	CP., 47pF		
C206	08T72783F19	CP., 47pF		
C207	23T82372F08	ELY., (B.P.) 10 μF/16V		
C208	23T82372F08	ELY., (B.P.) 10 μF/16V		
C209	08T72783F38	CP., 1800pF		
C210	08T72783F38	CP., 1800pF		
C211	08T72783F23	CP., 100pF		
C212	08T72783F23	CP., 100pF		
C213	23S57422F09	ELY., 10 μF/16V		
C215	08T90316F17	T.F., 0.01 μF		
C216	08T50579F01	T.F., 0.01 μF		
C217	08T72783F28	CP., 270pF		
C218	08T72783F28	CP., 270pF		
C221	23S61523F28	ELY., 0.47 μF/50V		
C222	23S61523F34	ELY., 100 μF/10V		
C223	23S61523F12	ELY., 10 μF/16V		
C224	23T74437F32	TAN., 10 μF/16V		
C225	23S57422F09	ELY., 10 μF/16V		
C234	23T43247F05	ELY., 1 μF/50V		
C235	08S65128F69	CP., 0.01 μF		
C236	23S61523F34	ELY., 100 μF/10V		
C237	21C45322G14	CER., 22pF		
C238	21C45322G14	CER., 22pF		
C601	08S65128F22	CP., 30pF		
C602	08S65128F22	CP., 30pF		
C603	23S61523F34	ELY., 100 μF/10V		

Symbol No.	Part No.	Description		
C605	23S61523F12	ELY., 10 μF/16V		
C607	08S65128F69	CP., 0.01 μF		
● C608	23S57422F09	ELY., 10 μF/16V		
● C610	23S57422F11	ELY., 22 μF/16V		
C801	23T51232F02	ELY., 1000 μF/16V		
C803	23S61523F29	ELY., 1 μF/50V		
C805	23S61523F25	ELY., 0.1 μF/50V		
C806	23T82372F10	ELY., 3.3 μF/25V		
C807	23S61523F12	ELY., 10 μF/16V		
C808	23S61523F12	ELY., 10 μF/16V		
C811	23S92017F03	ELY., 100 μF/16V		
C812	23S92017F03	ELY., 100 μF/16V		
Resistors (All resistors are chip 1/16W±5% unless otherwise noted.)				
R201	06S53330F69	4.7k ohm 1/8W		
R203	06S64995F81	15k ohm		
R204	06S64995F81	15k ohm		
R205	06S64995F81	15k ohm		
R206	06S64995F81	15k ohm		
R207	06S64995F81	15k ohm		
R208	06S64995F81	15k ohm		
R209	06S64995F66	3.6k ohm		
R210	06S64995F66	3.6k ohm		
R211	06S64995F57	1.5k ohm		
R212	06S64995F57	1.5k ohm		
R213	06S64996F18	470k ohm		
R214	06S64996F18	470k ohm		
R215	06S64995F87	27k ohm		
R216	06S64995F87	27k ohm		
R217	06S64995F85	22k ohm		
R220	06S53331F02	100k ohm 1/8W		
R221	06S64995F81	15k ohm		
R222	06S64995F81	15k ohm		
R223	06S64996F02	100k ohm		
R224	06S64996F02	100k ohm		
R225	06S64995F89	33k ohm		
R226	06S64995F89	33k ohm		
R229	06S64995F37	220 ohm		
R230	06S64995F81	15k ohm		
R231	06S64995F87	27k ohm		
R232	06S64995F69	4.7k ohm		
R233	06S64995F76	9.1k ohm		
R234	06S64995F77	10k ohm		
R235	06S64995F41	330 ohm		
R248	06S64995F65	3.3k ohm		
R601	06S64995F61	2.2k ohm		
R602	06S64995F85	22k ohm		
R603	06S64995F85	22k ohm		
R604	06S64995F85	22k ohm		

Notes : ● : For North American model only (AO), ▲ : For European model only (EO), Others : Common.

Symbol No.	Part No.	Description		
	R608	06S64995F69	4.7k ohm	
	R609	06S64996F02	100k ohm	
	R613	06S64995F85	22k ohm	
	R614	06S64995F85	22k ohm	
	R615	06S53331F02	100k ohm 1/8W	
	R616	06S53331F02	100k ohm 1/8W	
	R617	06S64996F02	100k ohm	
	R618	06S64996F26	1M ohm	
●	R805	06S64995F77	10k ohm	
▲	R805	06S64995F65	3.3k ohm	
	R806	06S64995F69	4.7k ohm	
	R807	06S64996F02	100k ohm	
	R809	06S64995F77	10k ohm	
	R810	06S64995F85	22k ohm	
	R811	06S64995F53	1k ohm	
	R812	06S64995F85	22k ohm	
	R813	06S64995F61	2.2k ohm	
	R814	06S64995F77	10k ohm	
	R815	06T70072F80	2.7 ohm 1/4W	
	R816	06T70072F80	2.7 ohm 1/4W	
	R817	06S64995F77	10k ohm	
	R818	06S64995F77	10k ohm	
	R819	06S64995F61	2.2k ohm	
	R822	06T70072F45	470 ohm 1/4W	
	R823	06T70072F21	47 ohm 1/4W	
	R824	06T70072F21	47 ohm 1/4W	
	R830	06T70072F21	47 ohm 1/4W	
	R831	06T70072F21	47 ohm 1/4W	
	R832	06S64995F77	10k ohm	
	R833	06S64995F77	10k ohm	
	R834	06S64995F61	2.2k ohm	
	R835	06T70072F53	1k ohm 1/4W	
	R844	06T70072F21	47 ohm 1/4W	
	R845	06T70072F21	47 ohm 1/4W	
	R846	06S53330F77	10k ohm 1/8W	
	R6001	06T74182F07	Block, 47k ohm × 9	
	R6002	06T74182F03	Block, 100k ohm × 4	

Audio P. C. Board

IC's

IC301	51T73718F02	NJM4560D
IC302	51T47739F01	TC4066BP
IC303	51T73718F02	NJM4560D
IC304	51T73718F02	NJM4560D

Symbol No.	Part No.	Description		
Transistors/Switch				
Q301	48T73888F08	CP., FMG1		
Q307	48T57337F03	2SD1330		
Q308	48T57337F03	2SD1330		
Q309	48T57337F03	2SD1330		
Q310	48T57337F03	2SD1330		
S301	40T68063F01	Switch, SSJ-322A (TONE/BYPASS)		
Capacitors				
C301	08T42629F28	MYL.,	0.082 μ F	
C302	08T42629F28	MYL.,	0.082 μ F	
C303	08T42629F31	MYL.,	0.15 μ F	
C304	08T42629F31	MYL.,	0.15 μ F	
C305	08T44481F01	PP.,	330pF	
C306	08T44481F01	PP.,	330pF	
C307	08T44481F03	PP.,	390pF	
C308	08T44481F03	PP.,	390pF	
C309	23S61524F13	ELY.,	10 μ F/16V	
C310	23S61524F13	ELY.,	10 μ F/16V	
C311	23S61523F12	ELY.,	10 μ F/16V	
C312	23S61523F12	ELY.,	10 μ F/16V	
C313	23S61524F13	ELY.,	10 μ F/16V	
C315	23S61524F13	ELY.,	10 μ F/16V	
C316	23S61524F13	ELY.,	10 μ F/16V	
C317	23S61524F13	ELY.,	10 μ F/16V	
C319	23S61524F13	ELY.,	10 μ F/16V	
C320	23S61524F13	ELY.,	10 μ F/16V	
C321	23S61524F18	ELY.,	4.7 μ F/25V	
C322	23S61524F18	ELY.,	4.7 μ F/25V	
C323	08S65128F17	CP.,	18pF	
C324	08S65128F17	CP.,	18pF	
C325	23T43247F09	ELY.,	10 μ F/16V	
C326	23S61524F13	ELY.,	10 μ F/16V	
C327	08S65128F69	CP.,	0.01 μ F	
C328	23S57422F09	ELY.,	10 μ F/16V	
C329	21C45322G10	CER.,	10pF	
C330	21C45322G10	CER.,	10pF	
Resistors (All resistors are chip 1/16W±5% unless otherwise noted.)				
R301	06S64995F71	5.6k ohm		
R302	06S64995F71	5.6k ohm		
R303	06S64995F71	5.6k ohm		
R304	06S64995F71	5.6k ohm		
R305	06S64995F91	39k ohm		

Notes : ● : For North American model only (AO), ▲ : For European model only (EO), Others : Common.

Symbol No.	Part No.	Description		
R306	06S64995F91	39k ohm		
R307	06S64995F71	5.6k ohm		
R308	06S64995F71	5.6k ohm		
R309	06S64995F71	5.6k ohm		
R310	06S64995F71	5.6k ohm		
R311	06S64996F26	1M ohm		
R312	06S64996F26	1M ohm		
R317	06S53331F02	100k ohm 1/8W		
R318	06S53331F02	100k ohm 1/8W		
R319	06S64995F89	33k ohm		
R320	06S64995F89	33k ohm		
R321	06S64996F02	100k ohm		
R322	06S64996F02	100k ohm		
R323	06S64995F61	2.2k ohm		
R324	06S64995F85	22k ohm		
R332	06S53330F53	1k ohm 1/8W		
R333	06S64995F53	1k ohm		
R334	06S64995F53	1k ohm		
R335	06S64995F69	4.7k ohm		
R336	06S64995F69	4.7k ohm		
R337	06S64995F69	4.7k ohm		
R338	06S64995F69	4.7k ohm		
R339	06S53330F29	100 ohm 1/8W		
R340	06S53330F29	100 ohm 1/8W		
R341	06S53330F29	100 ohm 1/8W		
R342	06S53330F29	100 ohm 1/8W		
R343	06S64995F70	5.1k ohm		
R344	06S53330F70	5.1k ohm 1/8W		
R345	06S64995F70	5.1k ohm		
R346	06S64995F70	5.1k ohm		
R347	06S64995F70	5.1k ohm		
R348	06S64995F70	5.1k ohm		
R349	06S64995F70	5.1k ohm		
R350	06S64995F70	5.1k ohm		
VR301 VR302 VR303 VR304 VR305 VR306 S302	18T94013F02	Volume Control (BALANCE, VOLUME FADER, POWER)		
Front P. C. Board				
Diode/LED's				
D401	48T63462F01	CP., DAN202K		
LD401	48T72180F01	LED, (GRN/ORG)		
LD402	48T72180F01	LED, (GRN/ORG)		
LD403	48T72180F01	LED, (GRN/ORG)		
LD404	48T72180F01	LED, (GRN/ORG)		

Symbol No.	Part No.	Description		
Switches				
S403	40T70366F01	Tact, KHL-10906 (EJECT)		
S404	40T70366F01	Tact, KHL-10906 (1/CLEAR)		
S405	40T70366F01	Tact, KHL-10906 (2/PRESET)		
S406	40T70366F01	Tact, KHL-10906 (3/P.S.P.)		
S408	40T70366F01	Tact, KHL-10906 (4/REPEAT)		
S409	40T70366F01	Tact, KHL-10906 (5/SCAN)		
S410	40T70366F01	Tact, KHL-10906 (6/M.I.X.)		
S411	40T70366F01	Tact, KHL-10906 (DISK/▶/❚❚)		
S412	40T70366F01	Tact, KHL-10906 (TUNE/DISP)		
S413	40T70366F01	Tact, KHL-10906 (▶▶ /UP)		
S414	40T70366F01	Tact, KHL-10906 (DOWN/ ◀◀)		
S416	40T70366F01	Tact, KHL-10906 (RESET)		
Lamps				
PL401	65T95274F02	6V-70mA		
PL403	65T95274F02	6V-70mA		
PL405	65T80297F05	6V-65mA		
PL407	65T95083F01	6.7V-85mA		
PL409	65T95083F01	6.7V-85mA		
Resistors (All resistors are chip 1/4W±5% unless otherwise noted.)				
R401	06T70072F49	680 ohm		
R403	06T70072F49	680 ohm		
R405	06T70072F49	680 ohm		
R407	06T70072F49	680 ohm		
R409	06T70072F17	33 ohm		
R411	06T70072F26	75 ohm		
R413	06T70072F26	75 ohm		
R415	06T70072F47	560 ohm		
VR401	18T93886F03	Volume, Slide, 100k ohm B × 2 (GRN) (TREBLE/BASS)		

CD Mechanism Assembly Parts List

Symbol No.	Index	Part No.	Description		
202	4-G	15C90815F01	Guide, Top		
203		03S44205G14	Screw, Pan (M2×5)		
204	4-G	47A73606F01	Shaft, Roller		
205	4-G	01A73582F01	Assy, Roller		
206		04A41345P06	Washer, Lock (M2.1)		
207	3-G	75A90825F01	Cushion, Magnet		
208	4-G	45A90817F01	Arm, Solenoid (1)		
209	5-G	45A90818F01	Arm, Solenoid (2)		
210	5-G	41A92364F01	Spring, Solenoid		
211	4-H	43A90874F01	Bush, Cam		
212	4-G	47A61544F01	F/R Plunger		
213	5-G	03S94385F14	Screw Countersink (M2.6×3)		
214	3-G	84A92276F01	End Switch P. C. Board (A)		
215		03D40014G02	Screw, W/Washer (M2×6)		
216		03D40014G07	Screw, W/Washer (M2×4)		
217	4-H	04A41345P08	Washer, Lock (M1.7)		
218		15B91024F01	Guide, Disc Side		
219	3-G	75A90826F01	Sheet, Magnet		
221	2-G	49B90822F01	Roller (G)		
222	2-G	01A92317F01	Assy, Arm Load (L) Rivet		
223		43A90873F01	Bush, Roller		
224	5-E	01B92318F01	Assy, Loading Bracket Rivet		
225	5-D	41A90877F01	Spring, Cam		
226	5-D	03D40014G62	Screw, W/Washer (M2×3)		
227	6-D	44A90836F01	Gear (D)		
228	6-D	44A90837F01	Gear (E)		
229		04A41345P01	Washer, Lock (M1.2)		
230		75B90831F01	Damper, DP		
231		15A90832F01	Holder, Damper		
232	4-E	04C42091G06	Ring "E" (M1.5)		
233		04C42091G11	Ring "E" (M2.5)		
234	4-D	29C41045P02	Lug, Wrap Alound		
235	6-D	01B92319F01	Assy, Cam Loading Rivet		
236	5-D	43A92691F01	Bush, Up-Clamp		
237		04C42091G05	Ring "E" (M2)		

Symbol No.	Index	Part No.	Description		
238		03S44205G42	Screw, Pan (M2.6×4)		
239	2-E	01A92321F01	Assy, Clamper Bracket Rivet		
240		03S94385F09	Screw, Pan (M2×3)		
242	3-F	03S94385F01	Screw, Pan (M1.7×2.3)		
243	3-F	43A93646F01	Tabel, Spindle		
244	2-C	07A90992F08	Bracket, Screw		
245	2-E	47A91004F01	Shaft, Pick-up		
246		43A90995F01	Stopper, Shaft		
247		03S94385F10	Screw, Pan (M2×4)		
248	3-E	03S94385F06	Screw, Pan (M2×1.8)		
249	3-D	01B92218F01	Assy, Disc Support Arm		
250		04S40075G06	Washer, Polyslider (M2.1)		
251	4-D	01V91700F07	Assy, Motor Unit		
252	4-D	44A90996F01	Gear, Motor		
253	4-H	41B90875F06	Spring, Pull		
254	4-D	44A90997F01	Gear, Middle		
255	4-D	04A41345P02	Washer, Lock (M1.7)		
256	3-D	03S94385F12	Screw, Pan (M2×6)		
257	2-D	01V91700F08	Assy, Shaft Screw		
258	3-G	30T73687F14	Wire, Parallel (3P)		
259	3-C	41A90999F01	Spring, Screw		
260	3-C	43A41006F05	Spacer, Polyslider		
261	2-D	41A94452F01	Spring, Motor		
262	2-D	07A90993F01	Bracket, Pick		
263	2-E	01A90994F01	Spring, Nut		
264	2-E	03S94385F03	Screw, Pan (M1.7×4)		
265	3-F	84T90887F01	FPC Photo P. C. Board		
266	3-F	07A92196F01	Bracket, Flex Wire		
267	2-F	01A92322F01	Assy, Arm Clamp Rivet		
268	3-F	41B90875F05	Spring, Pull		
269	3-G	07B90840F01	Support, Clamp		
270	3-F	59A90842F01	Magnet, Clamp		
271	3-F	46A90868F01	Stud, Clamp		
272		04S40075G42	Washer, Polyslider (M2.1)		
274	5-D	44A90830F01	Rack, Cam		

NOTE : The parts without part numbers are not supplied.

Symbol No.	Index	Part No.	Description		
275	3-F	14A94817F01	Sheet, Table		
277	4-A	03D40014G06	Screw, W/Washer (M2.6×5)		
278	2-F	41A96086F01	Spring, Arm Clamp		
282		43A53357F08	Spacer, LED		
283	2-F	30T73687F13	Wire, Parallel (2P)		
284	2-F	01V91900F66	Assy, Photo P. C. Board		
285	5-H	01A92324F01	Assy, Arm Load (R) Rivet		
287	5-G	01T91085F01	Assy, Clutch DP		
288	5-G	04A41345P13	Washer, Lock (M1.7)		
289	2-H	03A90175F01	Screw, Bind (M2×4)		
290		03A90175F02	Screw, Bind (M2×3)		
291	4-F	41B90875F07	Spring Pull		
292	5-G	44A90834F01	Gear (B)		
293	4-H	44A90835F01	Gear (C)		
294	4-G	44B90838F01	Gear, Cam		
295	1-F	41A90876F01	Spring, Roller		
296	4-D	41A90875F01	Spring, Pull		
297	1-D	41B90875F02	Spring, Pull		
298	1-E	41B90875F03	Spring, Pull		
299	4-E	41B90875F04	Spring, Pull		
300		03S68259F12	Screw, Pan (M2×2.5)		
301	3-G	07A96007F01	Bracket, Support Clamp		
302	2-D	75S96179F01	Sheet, Support Disc		
303	1-C	01V91700F05	Assy, Pickup Unit-S		

Symbol No.	Index	Part No.	Description		

NOTE : The parts without part numbers are not supplied.

Symbol No.	Part No.	Description		
		Mute P. C. Board		
		Diodes／Capacitor		
D816	48T44813F02	Diode, MA165		
ZD807	48T68697F01	Diode, Zener, HZS2.7EB1		
C813	23S61523F14	ELY., 33 μ F／16V		
		Miscellaneous		
BA801	60T83249F01	Battery, Lit		
E802	01T94604F02	Assy., QRB Connector		
HD201	88T90878F01	Pick-up Unit		
LCD401	65T94131F01	LCD Display (LU1405)		
M701	01V91700F04	Assy., Motor Loading		
M702	59T90879F01	Motor, SLED		
M703	59T91005F01	Motor, Spindle		
S701	40T71025F03	Switch, Detector		
S702	40T71025F01	Switch, Detector (Load END)		
S703	40T71025F01	Switch, Detector (LS)		
SD701	01A90816F01	Assy., DP Frame Solenoid		

Symbol No.	Part No.	Description		

Cabinet Assembly Parts List

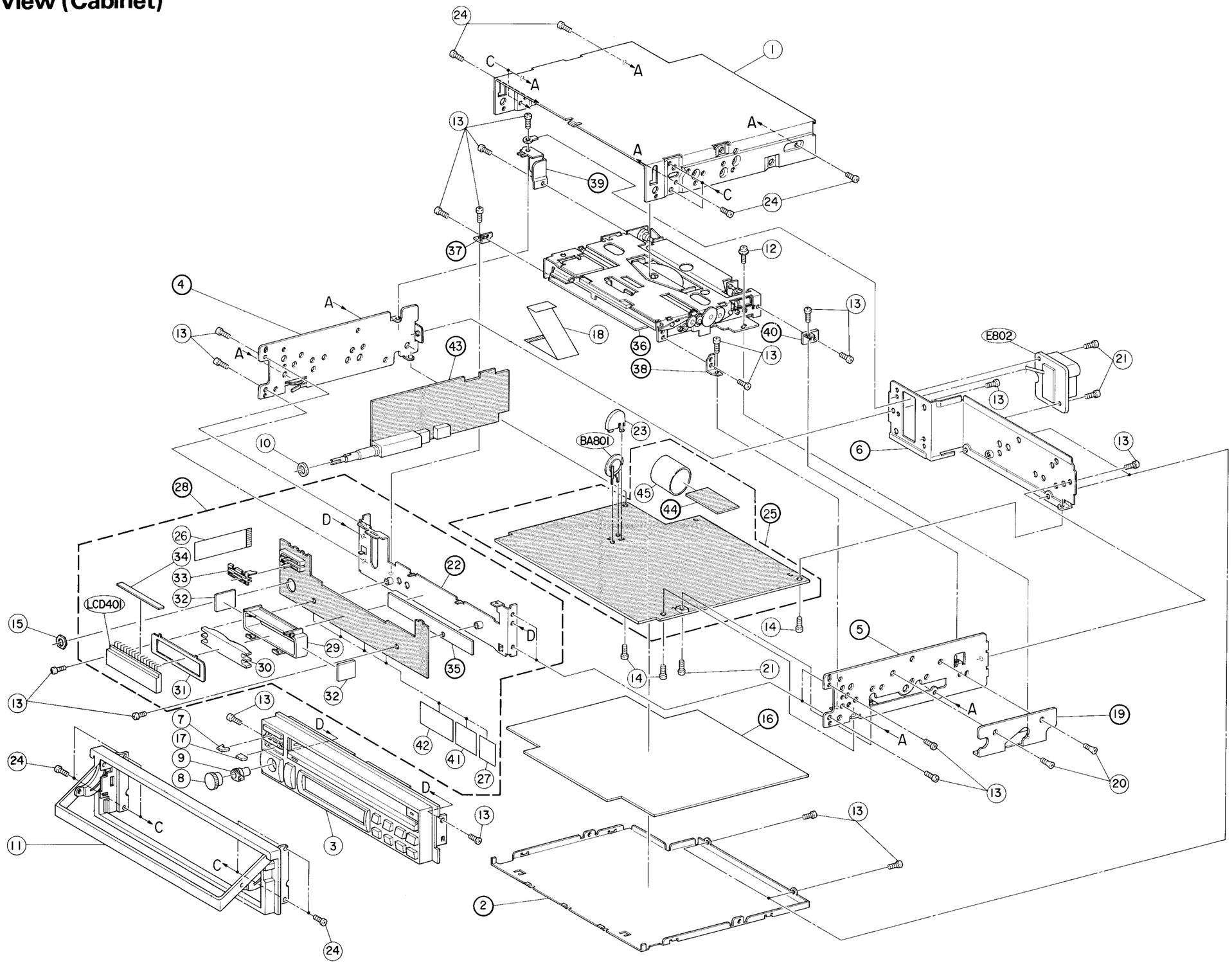
NOTE : The parts without part numbers are not supplied.

Symbol No.		Index	Part No.	Description		
	1	1-E	15C96403F03	Cover, Top		
●	3	5-C	13D94083F06	Assy., Nosepiese		
▲	3	5-C	13D94083F07	Assy., Nosepiece		
	7	5-B	36B94116F01	Knob, Slide		
	8	5-B	36A94114F01	Knob, Control (Front)		
	9	5-B	36A94115F01	Assy., Handol Bracket		
	10	3-C	04A43020G05	Washer (M9.2)		
	11	5-A	07C82176F01	Assy., Handle Bracket		
	12	2-E	03C42723U04	Screw, Cup (M2.6 × 8)		
	13		03S44205G07	Screw, Pan (M2.6 × 5)		
	14		03S44205G48	Screw, Pan (M2.6 × 5)		
	15	4-A	02S40000G20	Nut (M9)		
	17	5-B	36B94116F02	Knob, Slide		
	18	2-D	30T92773F01	FFC, 16P		
	20	5-G	03S40011G84	Screw, Countersink (M2.6 × 6)		
	21		03S44205G33	Screw, Pan (M2.6 × 8)		
	23	3-E	15A84078F01	Case, Battery		
	24		03S44205G34	Screw, Pan (M2.6 × 5)		
	26	4-B	30T82417F01	Flat Cable (12P)		
	27	5-D	01T94579F01	Flat Wire (5P)		
	29	4-C	15B94117F01	Case, LCD		
	30	4-C	61A94118F01	Lens, LCD		
	31	4-B	26A94119F01	Reflector, Sheet		
	32		14S94461F16	Insulator, Cover		
	33	4-B	07A94609F01	Bracket, Shield		
	34	4-B	14S81482F90	Insulator, Cover		
	41	5-D	01T94579F02	Flat Wire (9P)		
	42	5-D	01T94579F03	Flat Wire (25P)		
	45	3-E	37T43734F03	Sumi Tube		

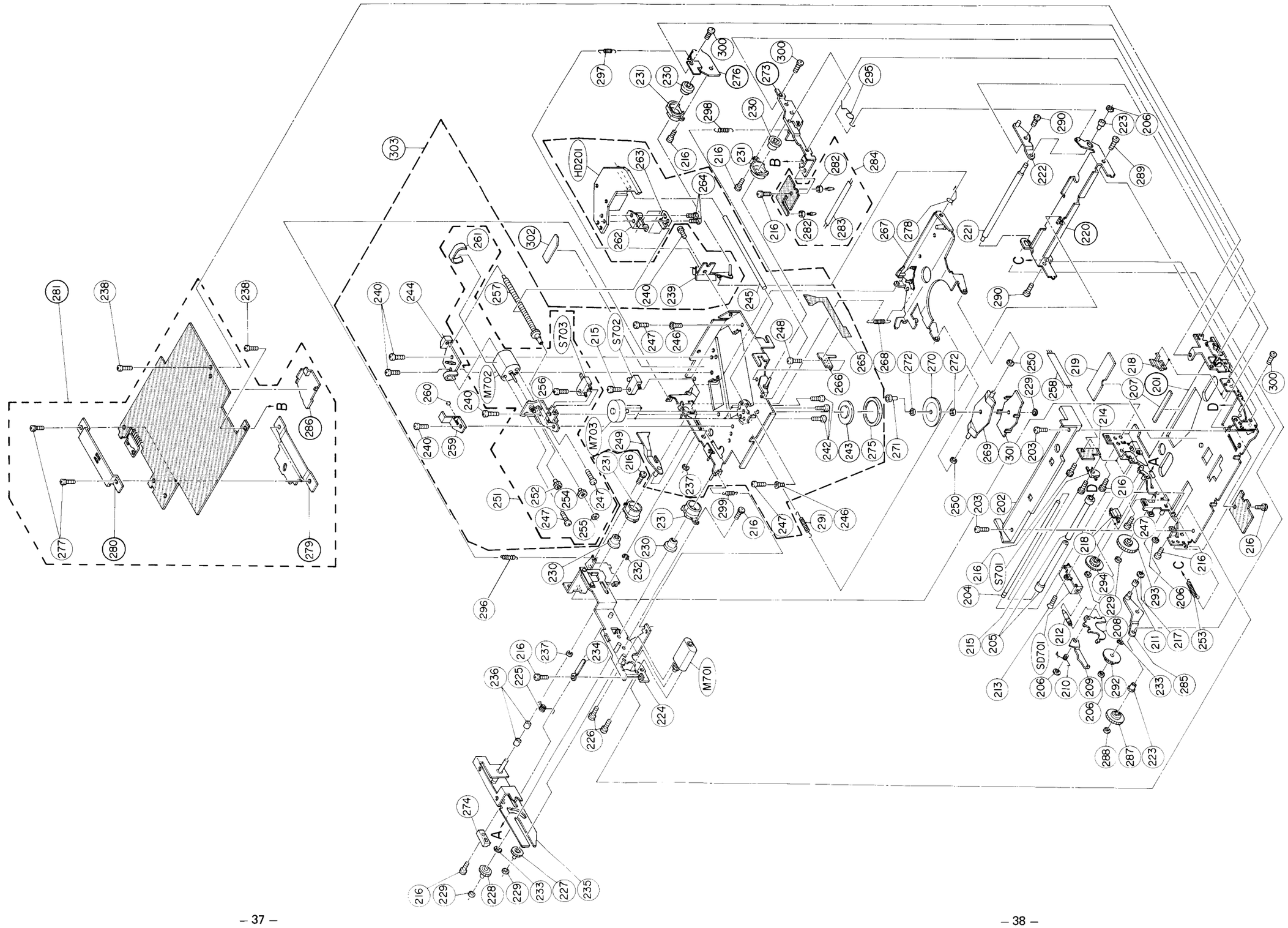
Symbol No.		Index	Part No.	Description		

Notes : ● : For North American model only (AO), ▲ : For European model only (EO), Others : Common.

Exploded View (Cabinet)



Exploded View (CD Mechanism)



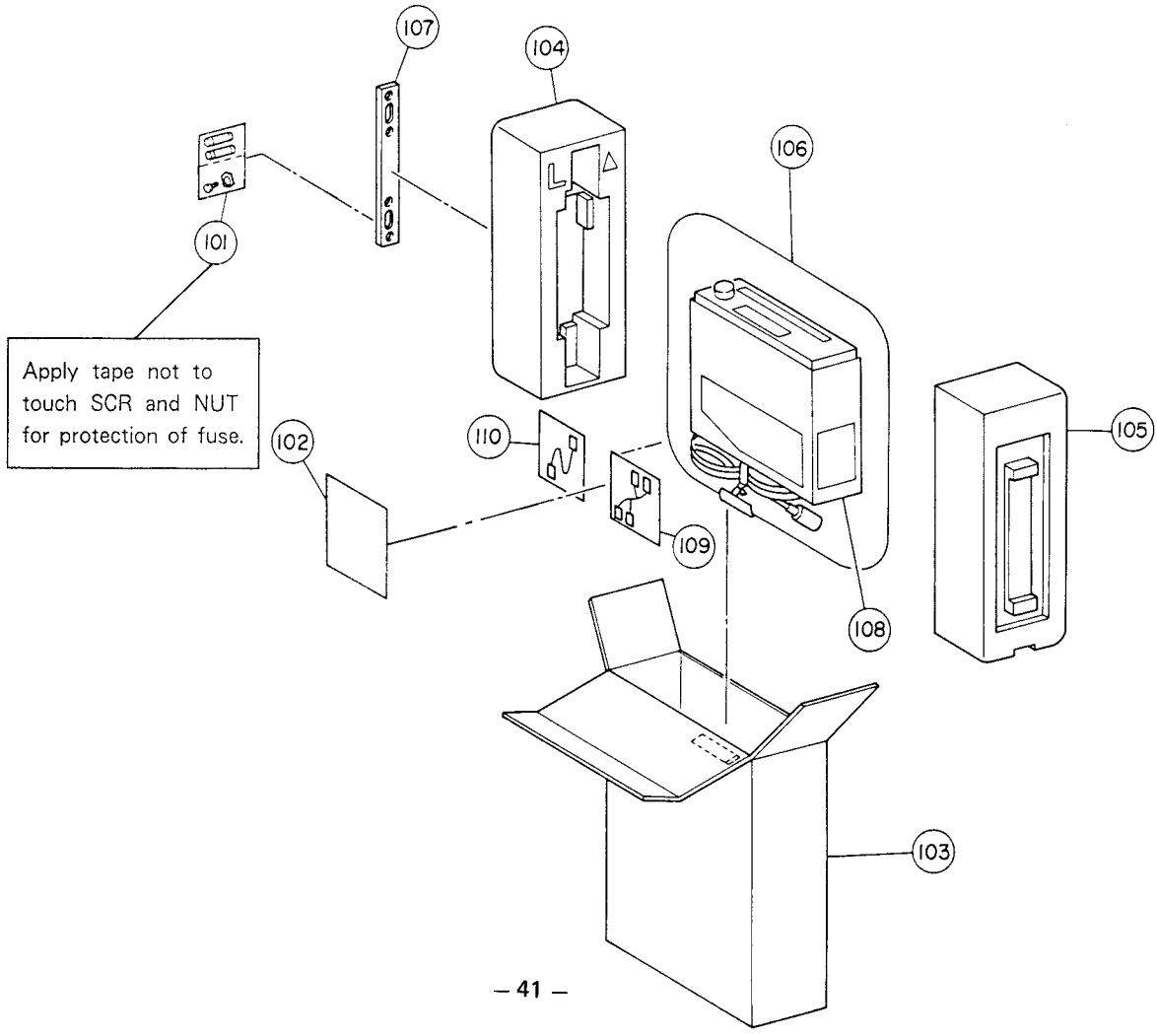
Packing Assembly Parts List

	Symbol No.	Part No.	Description		
	101	01V94900F44	Assy., Kit		
▲	101-1	02B47353F01	Nut, Hex (M5)		
▲	101-2	03S40012G66	Screw, Topping (M5×20)		
▲	101-3	03B44963F03	Bolt, Hex W/Washer (M5×10)		
▲	101-4	46A42363F01	Stud, Bolt		
▲	101-5	03A40155F01	Bolt, Hex (M5×8)		
▲	101-6	65A40348G04	Fuse, 3A (For ACC Battery Line)		
▲	101-7	03A84814F04	Screw, Bind (M2.6×8)		
▲	101-8	43A58272F03	Spacer		
●	102	01V94500F15	Assy., Pamphlet		
▲	102	68P93881F49	Owners Manual		
	103	56S90024F80	Carton, Packing (Individual)		
	104	56D82187F01	Tray, Packing (L)		
	105	56D82187F02	Tray, Packing (R)		
	106	56B40990T36	Sack, Polyethylene		

	Symbol No.	Part No.	Description		
	107	07B64552F01	Bracket, Strap Receiver		
	108	01V94500F15	Assy., Mother Case (Included Assembly Connector QRB (PLUG) [E801])		
▲	108-1	01T94603F04	Assy., Connector QRB (PLUG) [E801]		
▲	108-2	15D94518F01	Case, Motor		
▲	108-3	03S44205G33	Screw, Pan (M2.6×8)		
	109	01T96094F01	Assy., RCA600		
	110	01T96095F01	Assy., Connector (4P)		

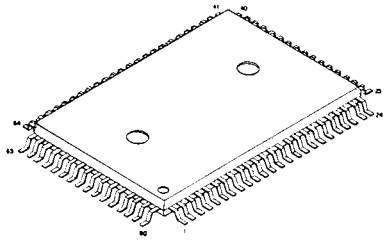
Notes : ● : For North American model only (AO), ▲ : For European model only (EO), Others : Common.

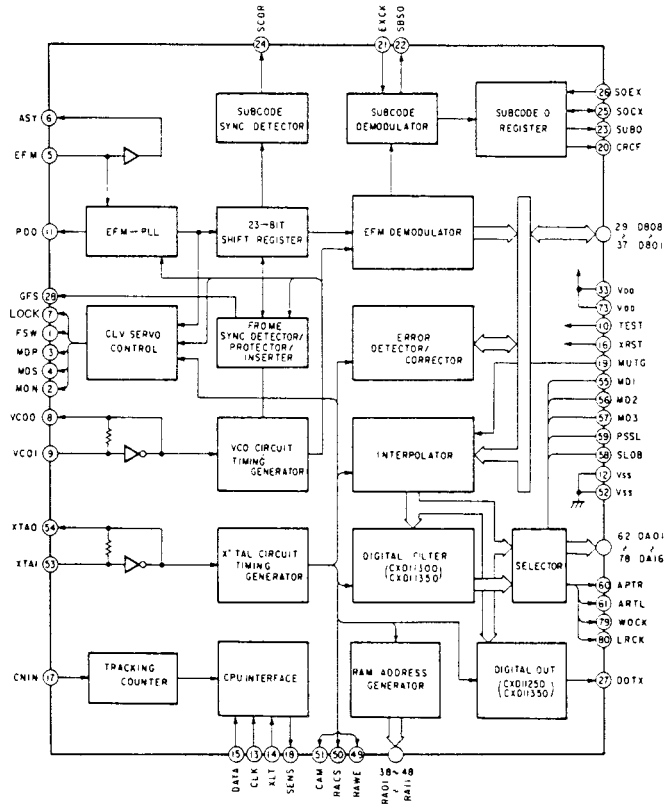
Packing Method View



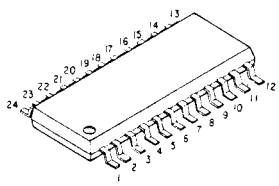
Semi-Conductor Lead Identifications

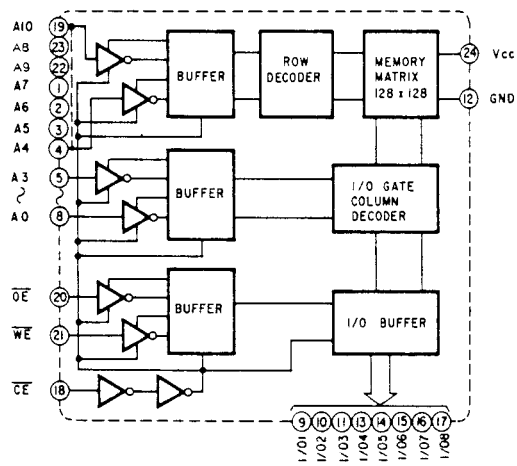
CXD1135Q : IC11



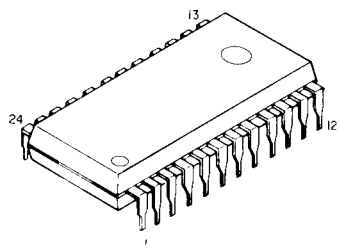


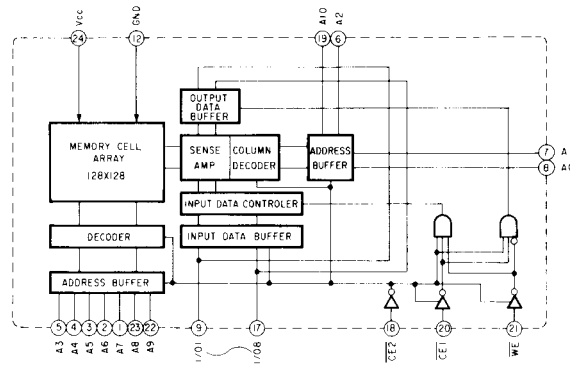
CXK5816M : IC12



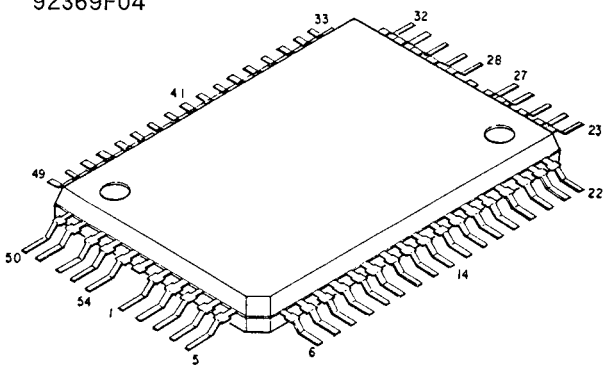


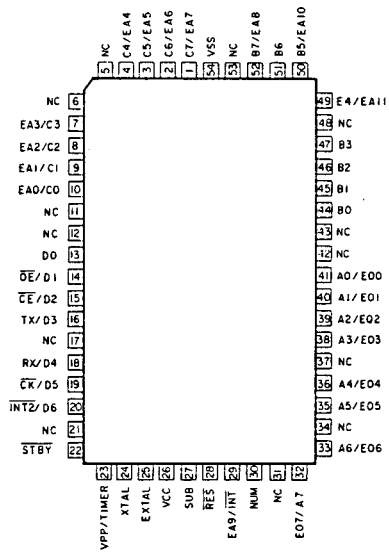
LC3516AML-15 : IC12



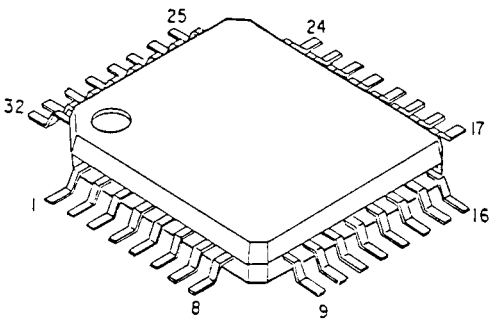


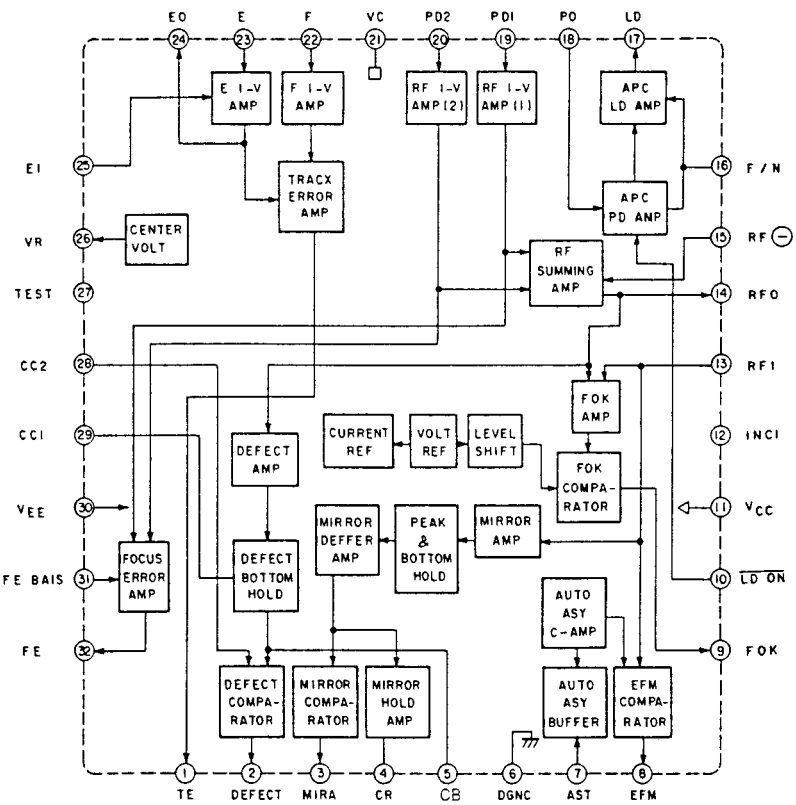
90390F02
92369F04 : IC13



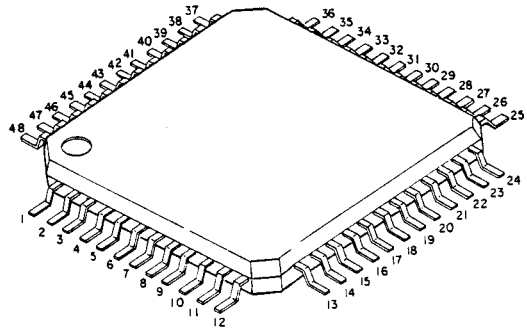


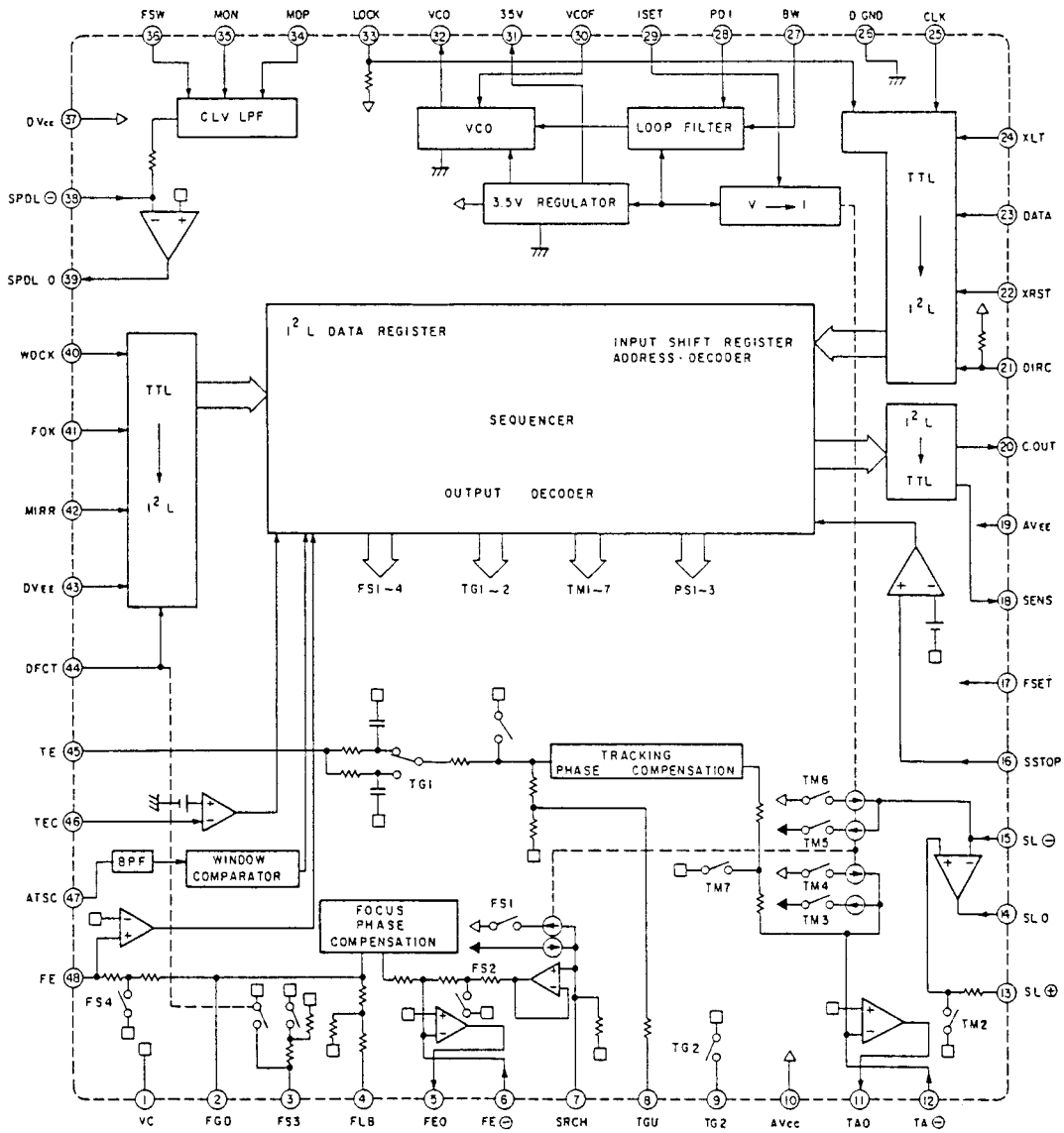
CXA1081Q : IC14



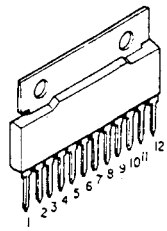


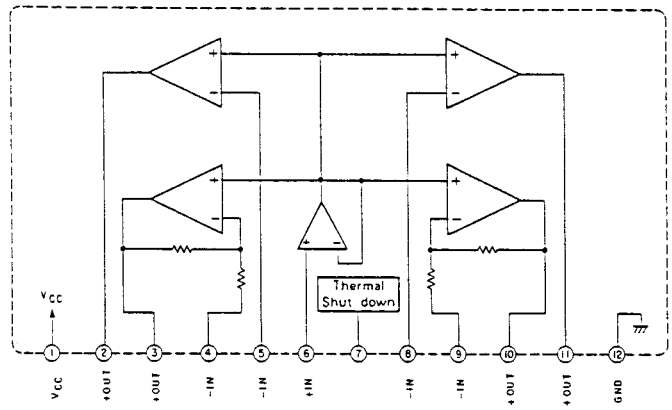
CXA1082AQ : IC15



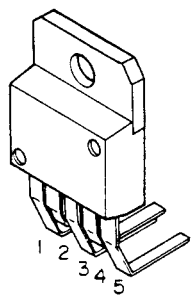


BA6291 : IC17

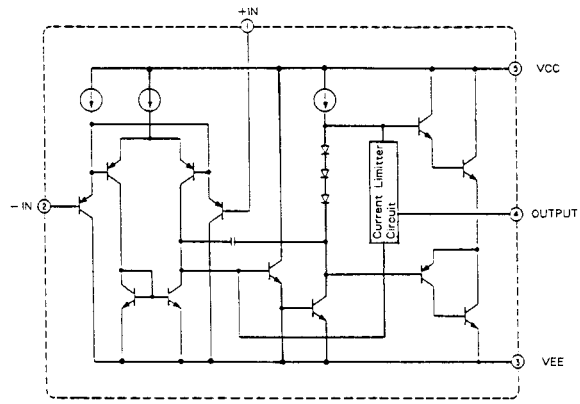




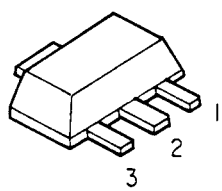
LA6501-LR : IC18



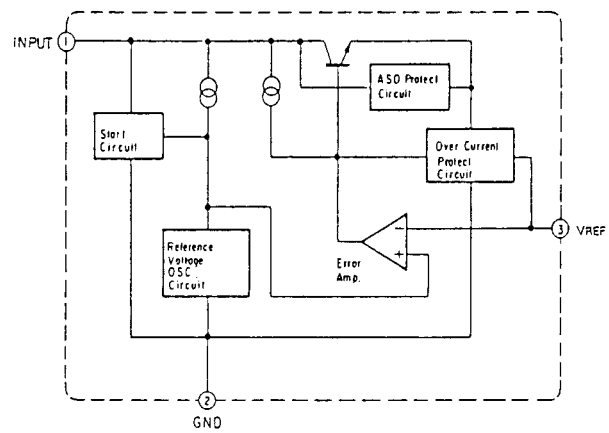
1. +IN
2. −IN
3. VEE
4. OUTPUT
5. VCC



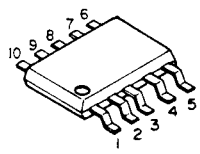
M5236ML : IC21

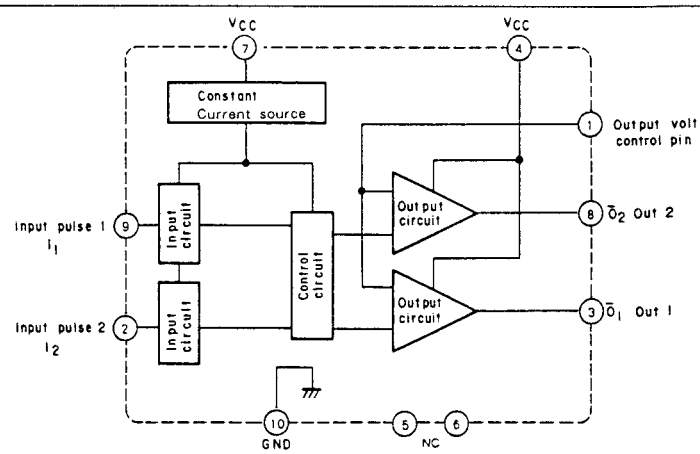


1 : INPUT
2 : GND
3 : V REF

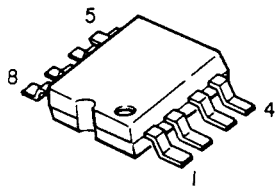


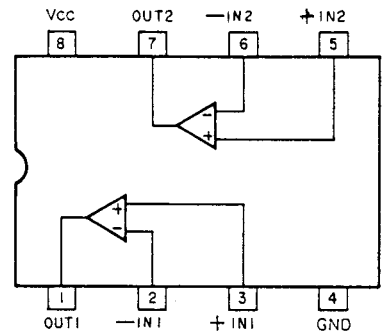
M54641FP : IC25



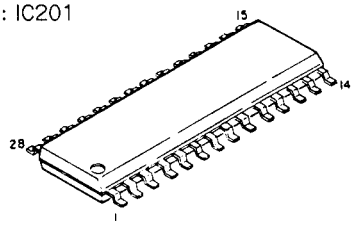


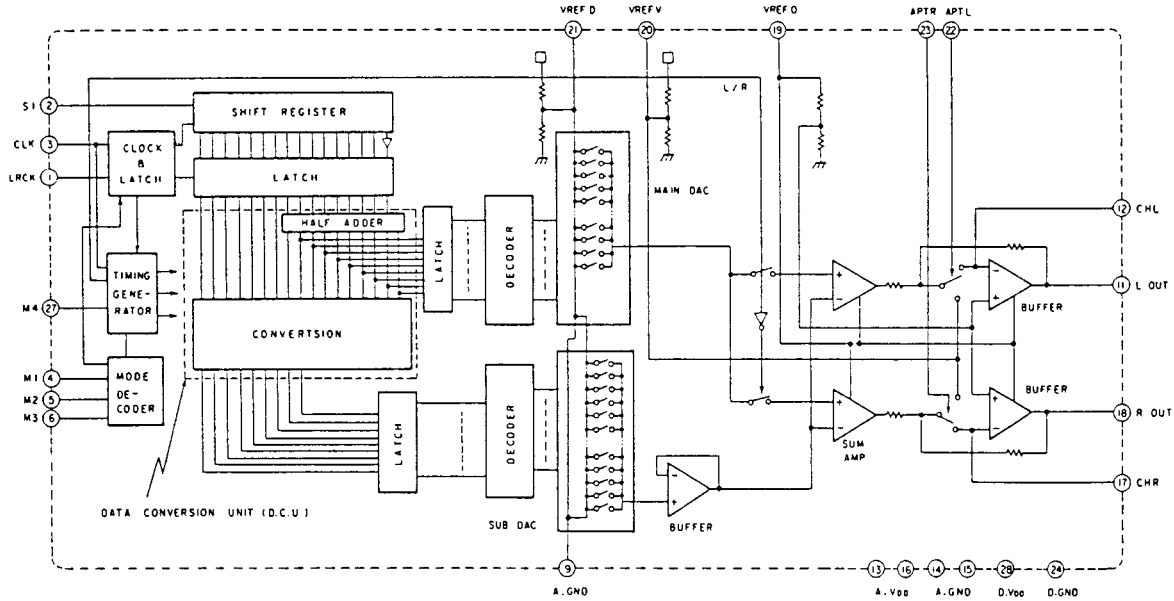
BA10358F
NJM2904M : IC26



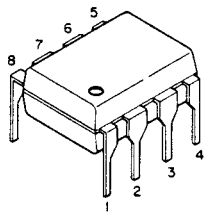


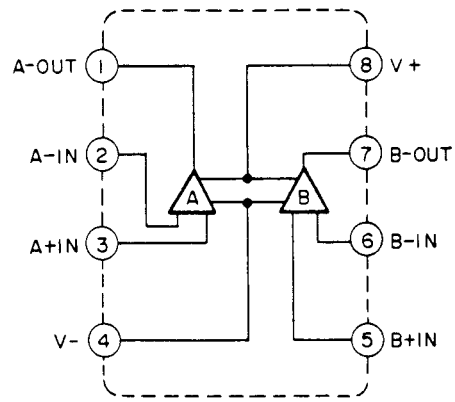
μ PD6355G : IC201



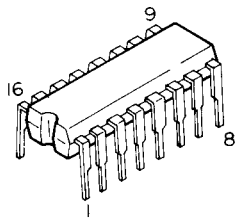


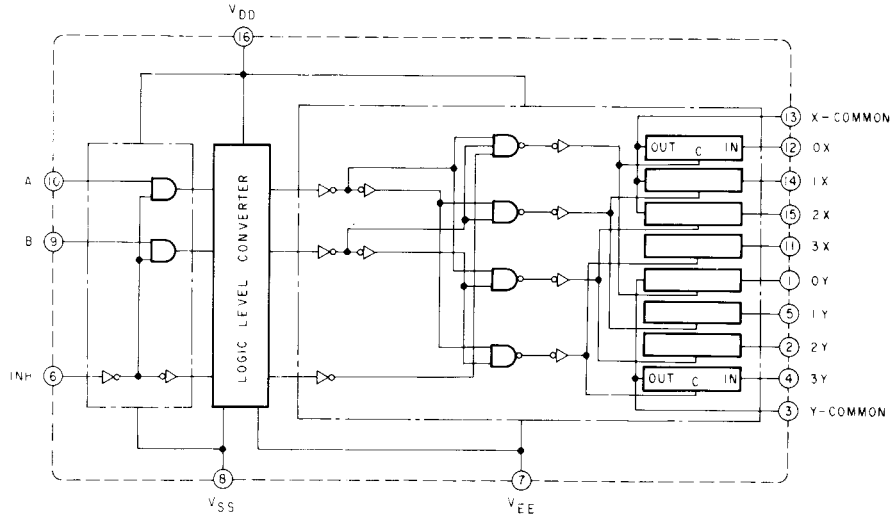
NJM4560D : IC202, 204, 206, 301, 303, 304



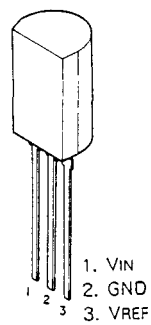


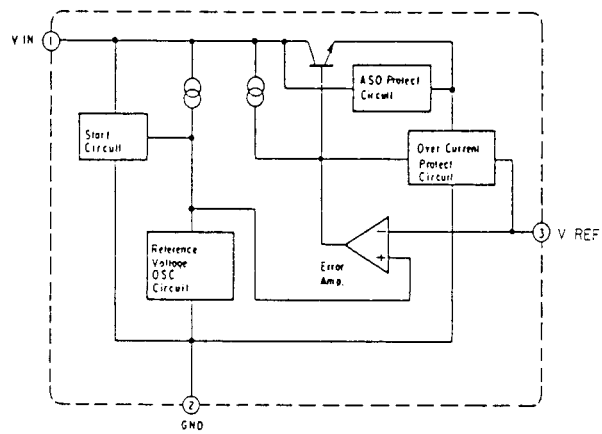
TC4052BP : IC203



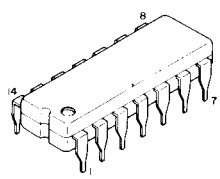


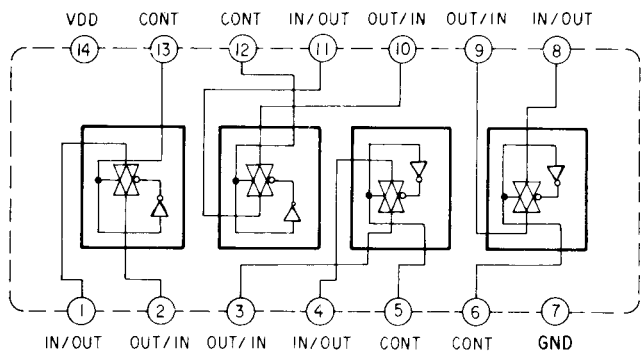
M5236L : IC205





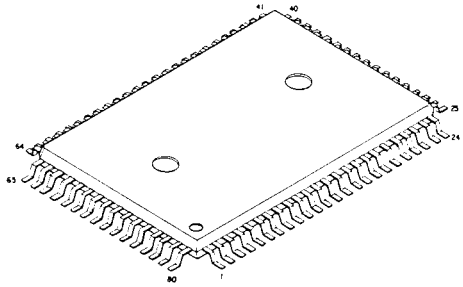
TC4066BP : IC302, 603

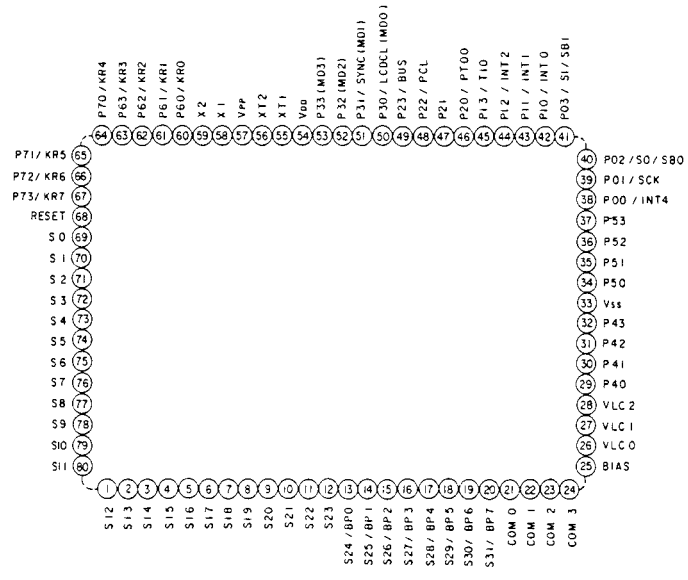




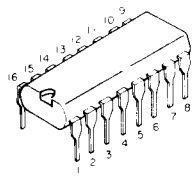
94530F02 : IC601 (AO model only)

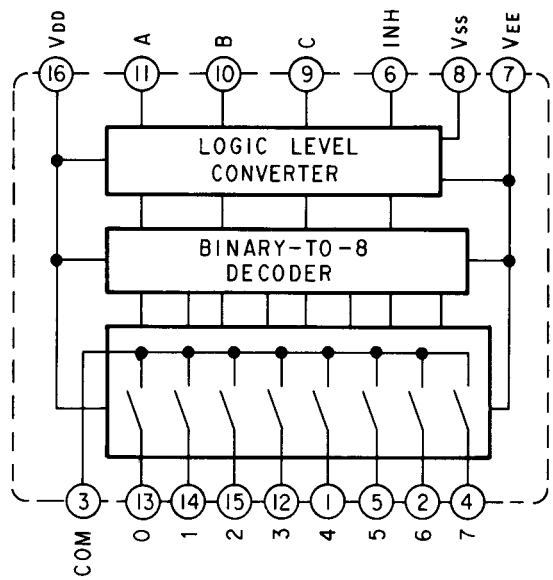
94530F04 : IC601 (EO model only)



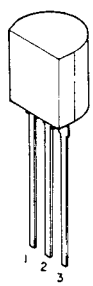


TC4051BP : IC602

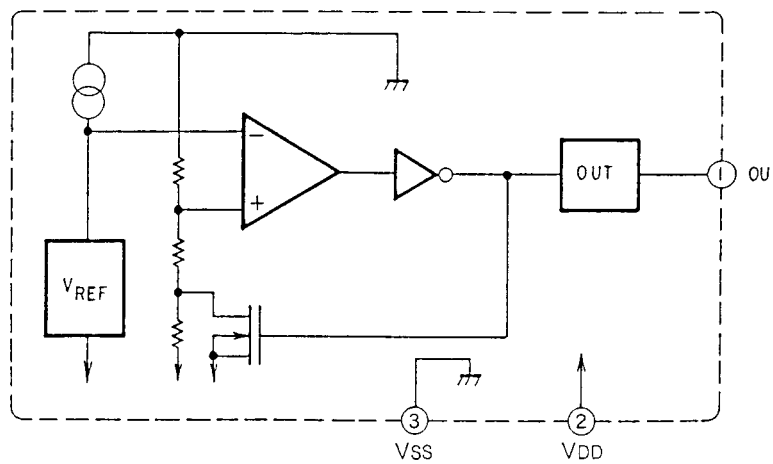




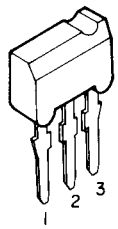
S-8052ALR : IC604

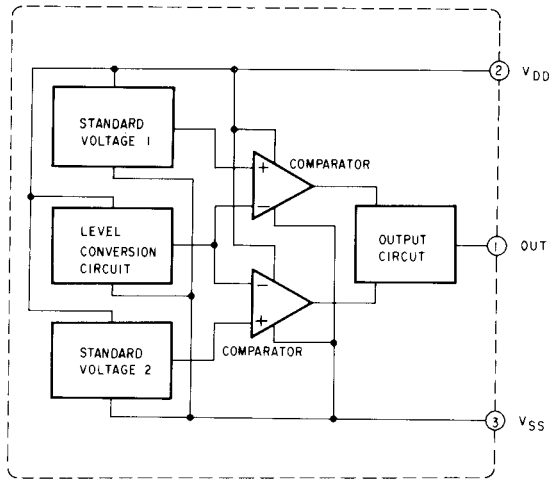


1. OUT
2. VDD
3. VSS

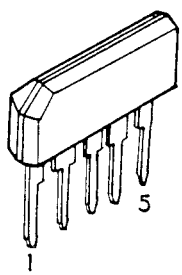


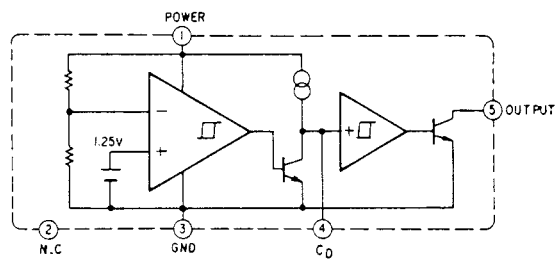
MN1280 : IC605



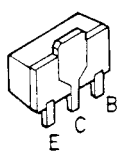


M51953BL : IC801

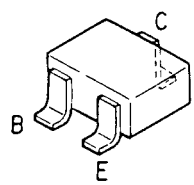


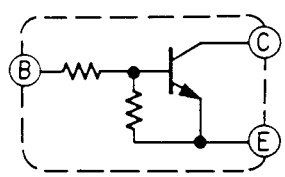


2SB1073 : Q11
2SB1188 : Q19, 33
2SD1766 : Q32

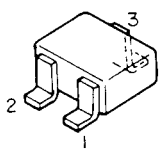


DTC124K : Q12, 18, 24, 28, 31

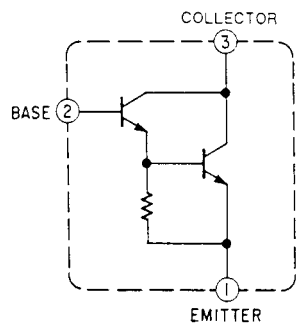




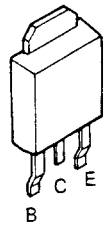
2SD1383K : Q13



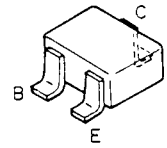
(1) EMITTER
(2) BASE
(3) COLLECTOR

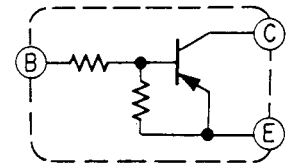


2SD1760 : Q16

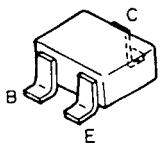


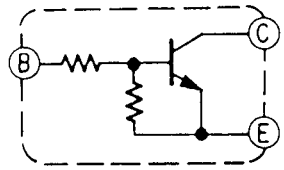
DTA124K : Q17, 27, 30
DTA124EU : Q805
DTA114EU : Q807



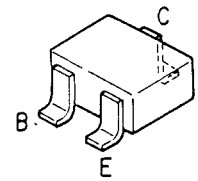


DTC144K : Q21, 29
DTC124EU : Q203, 806, 808, 810, 811, 812

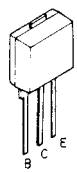




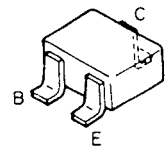
2SC2412K : Q22
2SA1576 : Q601, 809

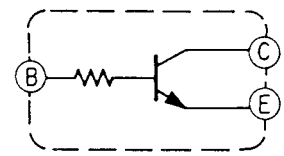


2SB1172A : Q25
2SD1742 : Q26

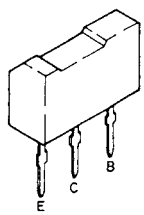


DTC114TU : Q201, 202, 602

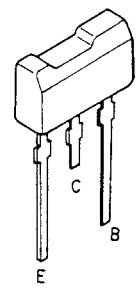




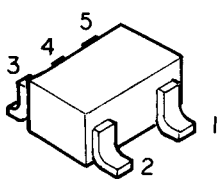
2SB911M: Q205, 825



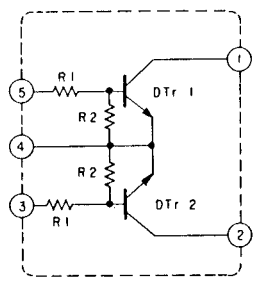
2SD1991 : Q206
2SD1992 : Q803, 804



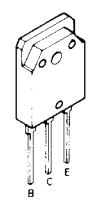
FMG1 : Q301, 603, 820



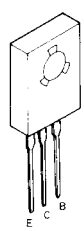
1. Collector
2. Collector
3. Base
4. Emitter
5. Base



2SD1330 : Q307, 308, 309, 310



2SD1189 : Q814



2SB644 : Q819